

Creating
opportunities
to rise



Barclays PLC
Pillar 3 Report
2018

Our common Purpose is ‘Creating opportunities to rise’. We are a company of opportunity makers working together to help people rise – customers, clients, colleagues and society.

For further information and a fuller understanding of the results and the state of affairs of the Group, please refer to the full Barclays PLC Annual Report 2018 suite of documents available at home.barclays.com/annualreport

Barclays PLC Strategic Report 2018

An overview of our 2018 performance, a focus on our strategic direction, and a review of the businesses underpinning our strategy.

Barclays PLC Annual Report 2018

A detailed review of Barclays 2018 performance with disclosures that provide useful insight and go beyond reporting requirements.

Barclays PLC Country Snapshot 2018


An overview of our tax contribution country by country as well as our broader approach to tax, including our UK tax strategy.


Barclays PLC Environmental Social Governance (ESG) Report 2018

Our ESG strategic priorities and performance, reported against a range of quantitative and qualitative indicators.

Barclays PLC Pillar 3 Disclosures 2018


A summary of our risk profile, its interaction with the Group's risk appetite, and risk management.


 When you see this icon you will find more information on another page or Barclays report

 When you see this icon you will find more information online

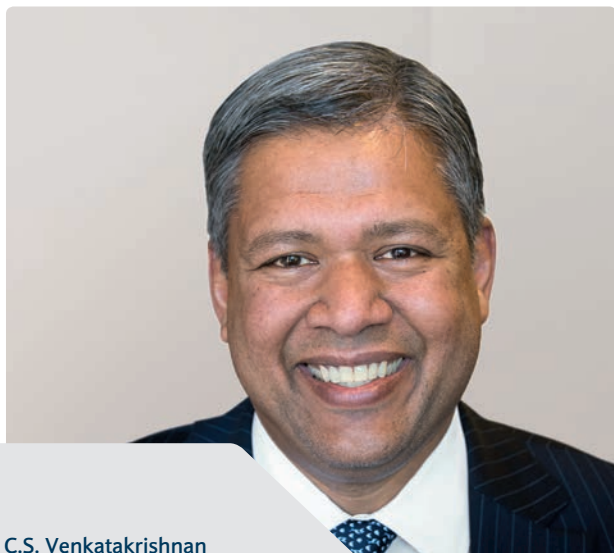
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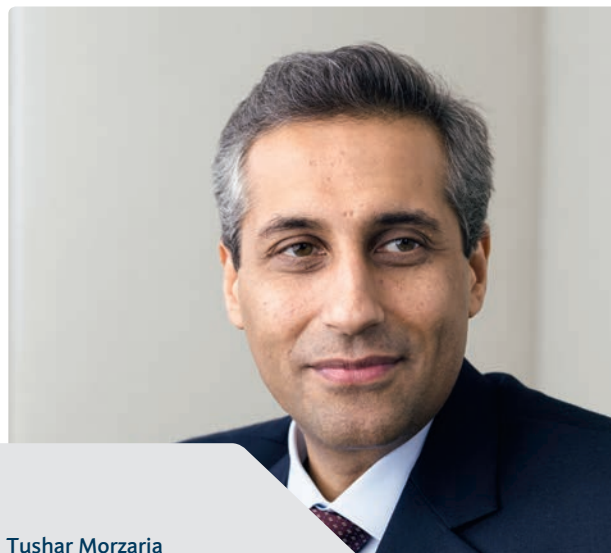
 See page 221 for an index of all risk disclosures in the Pillar 3 and Annual Reports

 A glossary of terms and remuneration disclosures can be found at: home.barclays.com/annualreport

Barclays PLC Pillar 3 Report



C.S. Venkatakrishnan
Chief Risk Officer



Tushar Morzaria
Group Finance Director

Capital position and risk management in 2018

Our annual disclosures contain extensive information on risk as well as capital management.

The Pillar 3 report provides a detailed breakdown of Barclays' regulatory capital adequacy and how this relates to Barclays' risk management.

During 2018, Barclays made strong progress against its strategic objectives and successfully established its ring-fenced bank, Barclays Bank UK PLC.

- Barclays Group' CET1 ratio ended the year at 13.2% (December 2017: 13.3%), at our end state target of c.13% as a £0.5bn capital decrease to £41.1bn was partially offset by a £1.1bn RWA decrease to £311.9bn.
- The UK leverage ratio remained flat at 5.1% (December 2017: 5.1%), whilst the average UK leverage ratio decreased to 4.5% (December 2017: 4.9%).

Summary of risk profile

This section presents a high-level summary of Barclays' risk profile and its interaction with the Group's risk appetite. Please see page 221 for a comprehensive index of all risk disclosures.

The Board makes use of the Risk Appetite Framework to set appetite, and continuously monitors existing and emerging risks.

The Group sets its risk appetite in terms of performance metrics as well as a set of mandate and scale limits to monitor risks. During 2018, the Group's performance was in line with its risk appetite. The following risk metrics reflect the Group's risk profile:

Common Equity Tier 1 ratio [\(see page 19\)](#)

13.2%

2017: 13.3%

Common Equity Tier 1 capital [\(see page 19\)](#)

£41.1bn

2017: £41.6bn

Risk weighted assets [\(see page 27\)](#)

£311.9bn

2017: £313.0bn

UK leverage ratio

5.1%

2017: 5.1%

Average UK leverage ratio

4.5%

2017: 4.9%

Loan loss rate [\(see page 145\)](#)

44bps

2017: 57bps

Management Value at Risk [\(see page 117\)](#)

£21m

2017: £19m

Liquidity coverage ratio [\(see page 34\)](#)

169%

2017: 154%

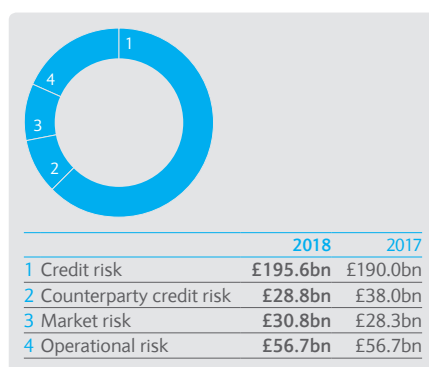
Summary of risk profile

- CET1 capital decreased £0.5bn to £41.1bn as underlying profit generation of £4.2bn was more than offset by £2.1bn, of litigation and conduct charges, as the Barclays Group resolved legacy matters, £1.7bn for ordinary dividends and Additional Tier 1 (AT1) coupon paid and forseen, £1.0bn from the redemption of capital instruments and £0.5bn of pension contributions
- RWAs remained broadly stable at £311.9bn (December 2017: £313.0bn). The Group continued to actively manage capital allocation to businesses during the year, including the redeployment of RWAs within CIB to higher returning businesses, while targeting growth in selected consumer businesses in Barclays UK and Consumer, Cards and Payments. Within Barclays UK, the increase in RWAs included the impact of a change in the regulatory methodology for the Education, Social Housing and Local Authority (ESHLA) portfolio which was partly offset by a reduction in Head Office due to the regulatory deconsolidation of Barclays Africa Group Limited (BAGL)
- The UK leverage ratio remained flat at 5.1% (December 2017: 5.1%). The leverage exposure increased marginally to £999bn (December 2017: £985bn) including securities financing transactions (SFTs), due to the CIB utilising leverage balance sheet more efficiently within high returning financing businesses. The average UK leverage ratio decreased to 4.5% (December 2017: 4.9%)
- Credit Impairment charges and other provisions for Barclays Group decreased 37% to £1,468m (December 2017: £2,336m) primarily driven by improvements in consensus-based macroeconomic forecasts in the UK and US, non-recurrence of single name charges in 2017, portfolio adjustments as IFRS9 has continued to embed, and the impact of repositioning the US cards portfolio towards a lower risk mix, partially offset by a £150m charge for the impact of current economic uncertainty in the UK. Overall this resulted in decrease of 13bps in the loan loss rate to 44bps
- Average management value at risk remained relatively stable in 2018 at £21m (December 2017: £19m)
- The liquidity coverage ratio (LCR) increased to 169% (December 2017: 154%), equivalent to a surplus of £90bn (December 2017: £75bn) to the 100% regulatory requirement. The Group also continued to maintain surpluses to its internal liquidity requirements. The strong liquidity position reflects the Group's prudent approach given the continued macroeconomic uncertainty

- Another component of the Group's risk appetite is a set of mandate and scale limits to help mitigate concentration risk, keep business activities within our mandate and allow Barclays to remain of an appropriate scale. During 2018, Barclays has made enhancements in the management of Structured Credit and Leveraged Lending including a revised framework of notional and stress loss limits and triggers to control concentration risk.

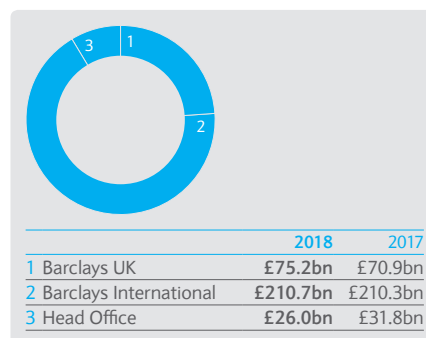
+ Please see page 136 for a discussion of risk appetite, and page 131 of the annual report for a discussion of material and emerging risks.

RWAs decreased £1.1bn to £311.9bn (2017: £313.0bn):



- Credit risk increased £5.6bn to £195.6bn primarily driven by business growth within Barclays International and Barclays UK, the appreciation of period end USD against GBP, as well as the impact of a change in the regulatory methodology for the ESHLA portfolio within Barclays UK; this was partially offset by an improvement in the risk profile within Barclays International and a reduction in Head Office due to the regulatory deconsolidation of Barclays Africa Group Limited (BAGL)
- Counterparty credit risk decreased £9.2bn to £28.8bn primarily driven by an extended regulatory permission to use the modelled exposure approach and changes to the regulatory treatment for assets associated with high risk.
- Market risk increased £2.5bn to £30.8bn primarily driven by trading activity
- Operational risk remained unchanged at £56.7bn (2017: £56.7bn)

+ We hold RWAs for credit (discussed on page 41), market (page 115), and operational (page 132) risks. See pages 29-30 for the main drivers of movements for each of these risk types.



- Barclays UK increased £4.3bn to £75.2bn primarily due to growth in the mortgage and UK cards books and regulatory methodology changes for the ESHLA portfolio
- Barclays International increased £0.4bn to £210.7bn primarily driven by business growth in Credit Cards & Payments as well as trading activity and appreciation of period end USD against GBP, partially offset by an extended regulatory permission to use the modelled exposure approach
- Head Office RWAs decreased £5.8bn to £26.0bn reflecting the net reduction due to the regulatory deconsolidation of BAGL

Notes on basis of preparation

Pillar 3 report regulatory framework

The Pillar 3 report is prepared in accordance with the Capital Requirements Regulation and Capital Requirement Directive ('CRR' and 'CRD IV', also known as the 'CRD IV legislative package'). In particular, articles 431 to 455 of the CRR specify the Pillar 3 framework requirements. The CRD IV legislative package came into force on 1 January 2014.

Barclays has fully adopted disclosures as per the European Banking Authority (EBA) guidelines on disclosure requirements under Part Eight of the Regulations (EU) No 575/2013 since 31 December 2017.

⊕ See 'Application of the Basel framework' on page 8 for a more detailed description.

Presentation of risk data in the Pillar 3 disclosures vs. the Annual Report and Accounts

This document discloses Barclays' assets in terms of exposures and capital requirements. For the purposes of this document:

Credit losses

Where impairment or losses are disclosed within this document, Barclays has followed the IFRS definitions used in the Annual Report.

Scope of application

Where this document discloses credit exposures or capital requirements, Barclays has followed the scope and application of its Pillar 1 capital adequacy calculations (unless noted otherwise).

Definition of credit exposures

- Credit exposure, or 'Exposure at Default' (EAD) is defined as the estimate of the amount at risk in the event of a default (before any recoveries) or through the decline in value of an asset. This estimate takes account of contractual commitments related to undrawn amounts.
- In contrast, an asset in the Group's balance sheet is reported as a drawn balance only. This is one of the reasons why exposure values in the Pillar 3 report will differ from asset values as reported in the Annual Report.

⊕ Table 5 provides a reconciliation between IFRS and EAD for credit risk. Table 59 provides a reconciliation between the IFRS impairment provision and the regulatory impairment allowance.

Policy, validation and sign-off

Throughout the year ended 31 December 2018, and to date, Barclays has operated a framework of disclosure controls and procedures in place to support the approval of the Group's Pillar 3 disclosure.

⊕ See Appendix F for a reference to Barclays' compliance with the CRD IV.

Barclays is committed to operating within a strong system of internal controls. A framework of disclosure controls and procedures are in place to support the approval of the Group's external financial disclosures. Specific governance committees are responsible for examining the Group's reports and disclosures so that they have been subject to adequate verification and comply with applicable standards and legislation. These Committees report their conclusions to the Board Audit Committee (BAC) which debates its conclusions and provides further challenge. Finally, the Board scrutinises and approves the Pillar 3 disclosures.

This governance process is in place to provide both management and the Board with sufficient opportunity to debate and challenge the Group's disclosures before they are made public.

"We confirm that Barclays' Pillar 3 disclosures, to the best of our knowledge, comply with Part Eight of the CRR and have been prepared in compliance with Barclays' internal control framework. In addition, we have made every effort to comply with the "EBA's Guidelines on disclosure requirements under Part Eight of Regulation (EU) No 575/2013" dated 14 December 2016, as advised by the EBA under paragraph 2.4 of such Guidelines."



C.S Venkatakrishnan
Chief Risk Officer



Tushar Morzaria
Group Finance Director

Scope and application of Basel rules

This section explains the scope of application of Basel rules in relation to capital adequacy.

- Figure 1 shows a representation of Barclays' entities within the scope of regulatory consolidation and how this differs from IFRS consolidation.
- Table 1 shows how IFRS balances contribute to the regulatory scope of consolidation on a line-by-line basis.
- Tables 2 and 3 show the scope of permission of calculation approaches that summarises the various approaches to calculate risk weighted assets, and Barclays' permission to use them.
- Tables 4 and 5 show the mapping of financial statement categories to regulatory risk types and a reconciliation of financial statement carrying values against regulatory exposures.
- Table 6 shows the entities which have a different method of consolidation between accounting and regulatory balance sheets.

Application of the Basel framework

Overview of Pillar 3

The Pillar 3 requirements as defined by the Basel Committee have been implemented by the European Union as part of the Capital Requirement Regulation and Capital Requirement Directive, (“CRR” and “CRDIV” also known as the “CRDIV legislative package”). Barclays has applied the Basel framework since its implementation. The framework is made up of three pillars:

Pillar 1:

covers the calculation of risk weighted assets for credit risk, counterparty credit risk, market risk and operational risk

Pillar 2:

covers the consideration of whether additional capital is required over and above the Pillar 1 risk calculations. A firm’s own internal models and assessments support this process

Pillar 3:

covers external communication of risk and capital information by banks as specified in the Basel rules to promote transparency and good risk management

Pillar 3 requires the disclosure of exposures and associated risk weighted assets for each risk type and approach to calculating capital requirements for Pillar 1.

Distinct regulatory capital approaches are followed for each of the following risk and exposure types:

- credit risk (including certain non-traded equity exposures)
- counterparty credit risk (CCR)
- credit valuation adjustment (CVA)
- market risk
- securitisations
- operational risk

Approaches to calculating capital requirements under CRD IV and the Capital Requirements Regulations (CRR)

Calculation of capital for credit risk

The credit risk weighted assets calculation is based on an estimate of the Exposure at Default (EAD). In addition, where Barclays has the necessary regulatory permissions, it estimates Probabilities of Default (PD) and Loss Given Default (LGD) (see page 151 and the online glossary for definitions):

- Standardised approach: assesses capital requirements using standard industry-wide risk weightings based on a detailed classification of asset types, ratings and maturity
- Internal Ratings-Based approach (IRB): assesses capital requirements using the Group’s specific data and internal models to calculate risk weightings. As such internal calculations of PD, LGD and credit conversion factors are used to model risk exposures (AIRB)

See page 41 for more details on capital requirements for credit risk. Also, the Internal Ratings-Based approach to credit risk section on pages 71-80 discusses credit risk modeling in detail.

Calculation of capital for counterparty credit risk

CCR differs from credit risk, above, in how the EAD is calculated and applies to derivative and SFT exposures. It arises where a counterparty default may lead to losses of an uncertain nature as the values of any resulting claims are market driven. This uncertainty is factored into the valuation of the Group’s

credit exposure arising from such transactions. The Group uses three methods under the regulatory framework to calculate CCR exposure:

- the Mark to Market method (MTM, also known as Current Exposure Method) used for derivatives which is the sum of the current market value of the instrument plus an add-on (dependent on potential future exposure, or PFE) that accounts for the potential change in the value of the contract over its residual maturity
- the Internal Model Method (‘IMM’), subject to regulatory approval, allows the use of internal models to calculate an effective expected positive exposure (EEPE), multiplied by a factor stipulated by the regulator called alpha. For Barclays this is set at 1.4. Barclays uses this approach for certain derivatives and SFT exposures
- the Financial Collateral Comprehensive Method (FCCM), which is the net position of SFT exposures after the application of volatility adjustments prescribed by CRR

See page 96 for more details on capital requirements for counterparty credit risk exposures.

Calculation of credit valuation adjustment capital charge

The CVA is the capital charge accounting for potential MTM losses due to credit quality deterioration of a counterparty (that does not necessarily default). As for CCR, two approaches can be used to calculate the adjustment:

- Standardised approach: takes account of the external credit rating of each counterparty, and incorporates the effective maturity and EAD from the CCR calculation (outlined above)
- Advanced approach: this approach requires the calculation of the charge as; a) a 10-day 99% value at risk (VaR) measure for the current one-year period; and b) the same measure for a stressed period. The sum of the two VaR measures is tripled to yield the capital charge

See page 114 for more details on CVA

Calculation of capital for market risk

Risk weighted assets calculations for market risk assess the losses from extreme movements in the prices of financial assets and liabilities:

- Standardised approach: a calculation is prescribed that depends on the type of contract, the net position at portfolio level, and other inputs that are relevant to the position. For instance, for equity positions a general market risk component captures changes in the market (systematic risk), while specific market risk is calculated based on features of the specific security (idiosyncratic risk)
- Model-based approach: with their regulator’s permission, firms can use proprietary value at risk (VaR) models to calculate capital requirements. Under the Basel framework, stressed VaR, incremental risk charge and all-price risk models must also be used to ensure that sufficient levels of capital are maintained

See page 115 for more details on capital requirements for market risk.

Calculation of capital for securitisation exposures

A separate regulatory framework exists for the calculation of securitisations risk weighted asset exposures, the scope of which is defined by the CRR. Securitisations give rise to credit, market and other risks. Whilst CRR prescribes a standardised and advanced approach for the calculation of risk weights, Barclays has approval to use, and therefore applies the IRB approach, which includes:

- the Ratings Based Approach, where external ratings are available
- for unrated transactions and where certain criteria is met the ‘look through’ approach can be used, which considers the risk of the underlying assets
- the Internal Assessment Approach, which is also used for unrated asset backed commercial paper programmes, which applies a similar methodology to rating agency models
- Where exposures do not meet one of the above criteria a 1250% risk weight is applied

See page 121 for more details on capital requirements for securitisation exposures.

Application of the Basel framework

Calculation of capital for operational risk

Capital set aside for operational risk is deemed to cover the losses or costs resulting from human factors, inadequate or failed internal processes and systems or external events.

To assess capital requirements for operational risk, the following methods apply:

- Standardised approach: the capital requirement is calculated as a percentage of the income, averaged over the last three years
- Basic Indicator approach (BIA): sets the capital requirement as 15% of the net interest and non-interest income, averaged over the last three years. If the income in any year is negative or zero, that year is not considered in the average
- Advanced Management approach (AMA): under the AMA, and subject to the regulatory approval, the capital requirement is calculated using the Group's own models

As at 31 December 2018, Barclays uses the Standardised Approach.

⊕ See page 132 for more details on capital requirements for operational risk.

Calculation of capital for large exposures

Barclays has not exceeded the large exposure limit set in CRR, and as such no capital charge applies.

Regulatory minimum capital and leverage requirements

Capital

As at 31 December 2018, Barclays' transitional CET1 ratio was 13.2% which exceeded the 2018 transitional minimum requirement of 10.4% comprising a 4.5% Pillar 1 minimum, a 1.9% Capital Conservation Buffer (CCB), a 1.1% Global Systemically important Institution (G-SII) buffer, a 0.5% Countercyclical Capital Buffer (CCyB) and a 2.4% Pillar 2A requirement.

Barclays' fully loaded CET1 regulatory requirement is 11.7% comprising a 4.5% Pillar 1 minimum, a 2.5% CCB, a 1.5% G-SII buffer, a 2.7% Pillar 2A requirement applicable from 1 January 2019, and a 0.5% CCyB.

Leverage

Barclays is subject to a UK leverage ratio requirement that is implemented on a phased basis, with a transitional requirement of 3.8% as at 31 December 2018. The fully loaded UK leverage requirement is expected to be 4.0%.

The leverage disclosure requirements reflected in the report are based on CRR. Barclays' CRR leverage ratio at 31 December 2018 was 4.3%.

Impact of new regulations

Structural reform of banking groups

Recent developments in banking law and regulation in the UK have included legislation designed to ring-fence the retail and smaller business deposit-taking businesses of large banks. The Financial Services (Banking Reform) Act 2013 put in place a framework for this ring-fencing and secondary legislation passed in 2014 elaborated on the operation and application of the ring-fence. Ring-

fencing requires, amongst other things, the separation of the retail and smaller business deposit-taking activities of UK banks in the UK and branches of UK banks in the European Economic Area (EEA) into a legally distinct, operationally separate and economically independent entity, which will not be permitted to undertake a range of activities from 1 January 2019. Ring-fencing rules have been published by the PRA, further determining how ring-fenced banks will be permitted to operate, and setting out detailed reporting. Further rules published by the FCA set out the disclosures that non-ring-fenced banks are required to make to prospective account holders.

Further to the implementation of the UK structural reform legislation and the establishment of Barclays' ring fenced bank, and in accordance with Article 13 of the Capital Requirements Regulation (CRR), the Pillar 3 disclosures include information related to Barclays' significant subsidiaries or those that are significant within their local market. Barclays defines its significant subsidiaries as those entities with RWAs that account for 5% or more of Barclays PLC's total RWAs. The information related to subsidiaries that are subject to similar local disclosure requirements are not included in this report.

Barclays PLC's significant subsidiaries as at 31 December 2018 are Barclays Bank PLC and Barclays Bank UK PLC

⊕ Please see page 220 of the Annual Report for a more complete discussion of structural reform.

IFRS 9 – Financial instruments

IFRS 9 (an accounting standard that covers accounting for financial instruments), which was adopted into EU law, came into force on 1 January 2018. On 28 December 2017, an EU Regulation came into force to provide transitional arrangements for mitigating the impact of the introduction of IFRS 9, in large part, on the potential impact on CET1 capital arising from the expected credit loss accounting measures set out in IFRS 9. The Regulation has applied since 1 January 2018.

Further to implementation of IFRS 9, this report includes for the first time at year end a table (pages 25-26) designed to show the impact the IFRS9 transitional arrangements on own funds and leverage measures.

BCBS Standards

In December 2017, the BCBS finalised 'Basel III' (the BCBS international regulatory framework for banks), with the majority of these changes expected to be implemented by 1 January 2022, including by regulators in many jurisdictions where Barclays operates.

The BCBS's finalisation of Basel III, noted above, among other things, eliminated model-based approaches for certain categories of risk-weighted assets (RWAs) (for example, operational risk RWAs, CVA volatility and credit risk RWAs for equity exposures), revised the standardised

approach's risk weights for a variety of exposure categories, replaced the four current approaches for operational risk (including the advanced measurement approach) with a single standardised measurement approach, established 72.5% of standardised approach RWAs for exposure categories as a floor for RWAs calculated under advanced approaches (referred to as the "output floor", with a five-year phase-in period), and for G-SIBs introduced a leverage ratio buffer in an amount equal to 50% of the applicable G-SIB buffer used for RWA purposes (meaning, for Barclays, a leverage ratio buffer of 0.75%).

In January 2019, the BCBS issued an update to the new market risk framework, including rules made as a result of its "fundamental review of the trading book" (FRTB). The implementation of this framework will be 1 January 2022.

The BCBS has also published final standards on the securitisation framework, which took effect in the EU from 01 January 2019, with a one year grandfathering period for existing transactions.

The final standards for measuring and controlling large exposures were published by the BCBS in April 2014 to take effect in 2019.

In November 2016 the European Commission adopted a proposal (commonly referred to as CRD V) to begin the legislative process for introducing these standards within the EU. Political agreement on this 'Risk Reduction Measures' package was reached in December 2018. These proposals, would, among other things, implement FRTB by overhauling existing rules relating to standardised and advanced market risk and the rules governing the inclusion of positions in the regulatory trading book. The proposals would also enhance rules for counterparty credit risk, in line with BCBS proposals finalised in 2014, strengthen requirements relating to leverage and large exposures and introduce a net stable funding ratio (NSFR), requiring banks to fund their assets with stable sources of funds.

CRD V also proposes to require that where (i) two or more credit institutions or investment firms established in the EU have a common parent undertaking established outside the EU and (ii) the group has been identified as a G-SIB or has entities in the EU (whether subsidiaries or branches) with total assets of at least €30 billion, the group must establish an intermediate parent undertaking ('IPU'), authorised and established in, and subject to the supervision of, an EU member state. Political agreement permitting two IPUs, where structural reform within the head office jurisdiction would not enable a single IPU to operate, was agreed in December 2018.

⊕ Please see page 216 of the Annual Report for a more complete discussion of prudential developments.

Scope of application of Basel rules

Scope of consolidation

Scope of consolidation

In this report, Barclays PLC is presented on a consolidated basis. All disclosures are published for Barclays PLC for the year ended 31 December 2018. The consolidation basis used is the same as that used for reporting regulatory capital adequacy to the UK Prudential Regulation Authority. This scope of consolidation is similar to that used for statutory accounting reporting for most of the Group's activities, except for:

- subsidiaries engaged in non-financial activities such as insurance and securitisation vehicles that are fully consolidated for statutory purposes but are not consolidated for regulatory purposes (exposures to securitisation vehicles are subject to a specific capital treatment, see page 121 for further details). Entities not consolidated for regulatory purposes are adequately capitalised
- associates, joint ventures and participations, that are financial in nature and accounted for on an equity basis in the statutory accounts, are consolidated in proportion to the participation for regulatory calculations
- entities that are not financial in nature, as well as private equity investments treated as associates, are accounted for on an equity basis in the statutory accounts, but are deducted from capital for regulatory calculations

Significant subsidiaries

Significant subsidiaries disclosures are included in this report for Barclays Bank PLC and Barclays Bank UK PLC. The scope of these disclosures reflects the level that these entities are regulated at; this differs from the accounting disclosures, where both entities are disclosed on a Group consolidated basis.

Barclays Bank PLC

Barclays Bank PLC (BB PLC) is regulated by the Prudential Regulation Authority (PRA) on a solo consolidated basis and comprises Barclays Bank PLC as well as certain additional subsidiaries, subject to PRA approval. The disclosures provided in this document for BB PLC are based on this regulatory scope of consolidation. This differs from the accounting disclosures, where Barclays Bank PLC Group relates to Barclays Bank PLC and all its subsidiaries.

BB PLC primarily consists of the Corporate and Investment Bank (CIB), Consumer, Cards and Payments and Head Office. These are part of Barclays International business segment that is included within Barclays PLC Group. The difference between BB PLC and Barclays International is largely due to subsidiaries of BB PLC Group that are not included within the regulatory scope of BB PLC.

Barclays Bank UK PLC

Throughout 2018, Barclays Bank UK PLC (BBUK PLC) was regulated by the Prudential Regulation Authority (PRA) on an individual basis. The disclosures provided in this document for BBUK PLC are based on this regulatory scope of consolidation. This differs from the accounting disclosures, where Barclays Bank UK PLC Group relates to Barclays Bank UK PLC and all its subsidiaries. BBUK PLC Group became regulated by the PRA from 1 January 2019.

BBUK PLC is the UK ring-fenced bank largely comprising Personal Banking, Barclaycard Consumer UK and Business Banking. These are part of Barclays UK business segment that is included within Barclays PLC Group.

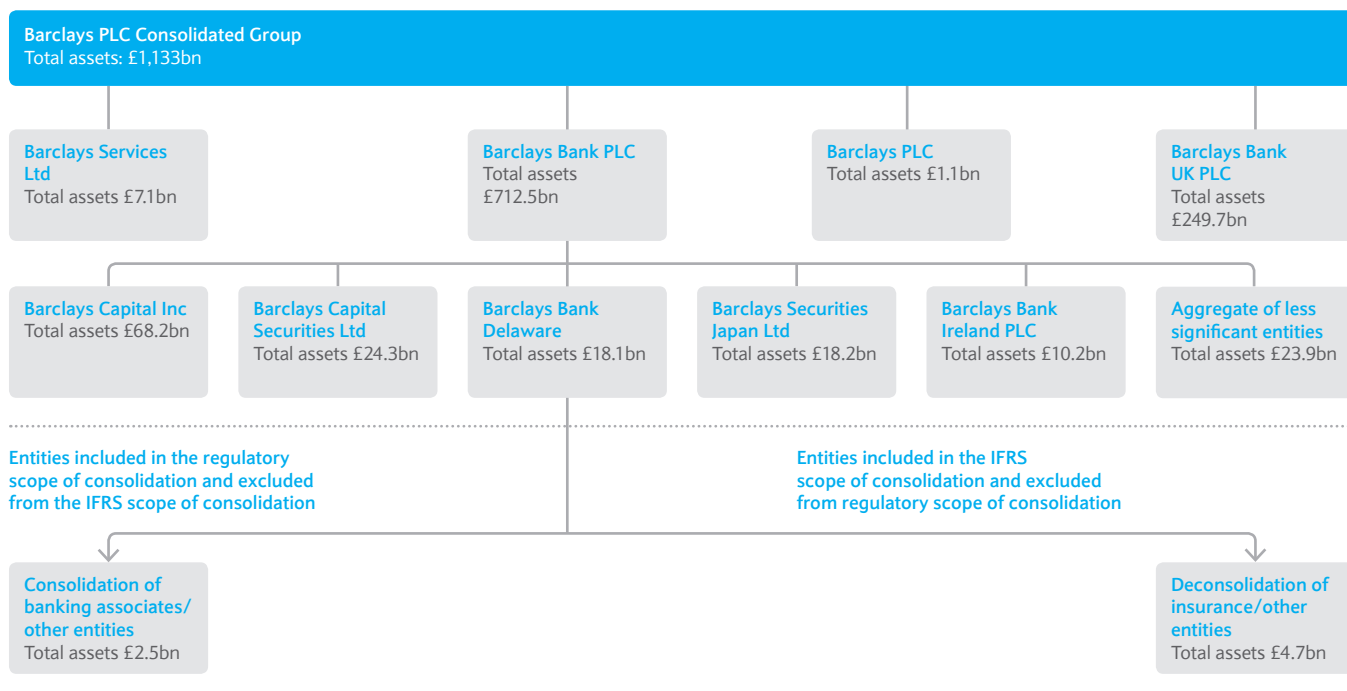


A list of the tables included in this report as part of the significant subsidiaries disclosures is shown in page 223.

The chart below summarises Barclays' structure with an indication of the sizes of material subsidiaries in terms of their respective contribution to total assets.

Figure 1: Summary of regulatory scope of consolidation as at 31 December 2018

Entities included in Pillar 3 Consolidation Groups and IFRS



Scope of application of Basel rules

Scope of consolidation

Table 1: Barclays PLC balance sheet - statutory versus regulatory view

This table shows the reconciliation between Barclays PLC balance sheet for statutory and regulatory purposes. Please note that the amount shown under the regulatory scope of consolidation is not a risk weighted asset measure; it is based on an accounting measure and cannot be directly reconciled to other tables in this report.

As at 31 December 2018	Accounting balance sheet per published financial statements £m	Deconsolidation of insurance/ other entities £m	Consolidation of banking associates/ other entities £m	Balance sheet per regulatory scope of consolidation £m
Assets				
Cash and balances at central banks	177,069	(14)	(77)	176,978
Cash collateral and settlement balances	77,222	–	–	77,222
Loans and advances at amortised cost	326,406	(6,104)	207	320,509
Reverse repurchase agreements and other similar secured lending	2,308	–	–	2,308
Trading portfolio assets	104,187	–	2,713	106,900
Financial assets at fair value through the income statement	149,648	(445)	283	149,486
Derivative financial instruments	222,538	–	(97)	222,441
Financial investments	–	–	–	–
Financial assets at fair value through other comprehensive income	52,816	–	109	52,925
Investments in associates and joint ventures	762	165	(643)	284
Goodwill and intangible assets	7,973	–	27	8,000
Property, plant and equipment	2,535	–	10	2,545
Current tax assets	798	–	–	798
Deferred tax assets	3,828	(10)	–	3,818
Retirement benefit assets	1,768	–	–	1,768
Other assets	3,425	1,692	(19)	5,098
Assets included in disposal groups classified as held for sale	–	–	–	–
Total assets	1,133,283	(4,716)	2,513	1,131,080
Liabilities				
Deposits at amortised cost	394,838	–	(78)	394,760
Cash collateral and settlement balances	67,522	–	–	67,522
Repurchase agreements and other similar secured borrowing	18,578	–	–	18,578
Debt securities in issue	82,286	(6,901)	–	75,385
Subordinated liabilities	20,559	–	–	20,559
Trading portfolio liabilities	37,882	–	2,543	40,425
Financial liabilities designated at fair value	216,834	–	–	216,834
Derivative financial instruments	219,643	–	–	219,643
Current tax liabilities	628	(9)	2	621
Deferred tax liabilities	51	–	–	51
Retirement benefit liabilities	315	–	–	315
Other liabilities	7,716	2,080	54	9,850
Provisions	2,652	(1)	–	2,651
Liabilities included in disposal groups classified as held for sale	–	–	–	–
Total liabilities	1,069,504	(4,831)	2,521	1,067,194
Total equity				
Called up share capital and share premium	4,311	–	–	4,311
Other equity instruments	9,632	–	–	9,632
Other reserves	5,153	7	82	5,242
Retained earnings	43,460	108	(90)	43,478
Total equity excluding non-controlling interests	62,556	115	(8)	62,663
Non-controlling interests	1,223	–	–	1,223
Total equity	63,779	115	(8)	63,886
Total liabilities and equity	1,133,283	(4,716)	2,513	1,131,080

Scope of permission for calculation approaches

Scope of permission for calculation approaches

Barclays seeks permission from its regulators to use modelled approaches where possible, to enable risk differentiation.

Barclays has regulatory approval to use its internal credit models in the calculation of the majority of its credit risk and counterparty credit risk exposures. The following table summarises the principal portfolios within Barclays that use the Standardised and Advanced IRB approaches as at 31 December 2018.

Table 2: The scope of the Standardised and IRB approaches for credit and counterparty credit risk excluding CVA

Business as at 31 December 2018	Credit risk (see Tables 29 & 30)			Counterparty credit risk excl. CVA (see Tables 62 & 63)			Advanced Internal Ratings Based (IRB) approaches	Standardised approach
	RWA £m	Average risk weight	EAD post-CRM £m	RWA £m	Average risk weight	EAD post-CRM £m		
Barclays UK	63,019	20%	311,592	229	32%	719	UK managed retail and wholesale portfolios UK cards	Minor UK Cards Portfolio Minor unsecured loan portfolios (closed books in run off) & the UK Wealth Portfolio
Barclays International	122,546	29%	420,408	25,106	26%	95,370	UK Corporate Portfolio Germany retail credit cards Most Investment Bank portfolios	High quality liquidity pool assets, UK asset and sales finance Mainly Non-UK managed retail (including Wealth) and wholesale portfolios (including legacy) US retail credit cards, joint card issuance, partner finance, secure lending, commercial payment and any recent portfolio acquisitions European Corporate Portfolio previously in the Corporate Bank Certain Investment Bank portfolios typically with low or no defaults, or other exposures by exception Certain portfolios typically with low or no defaults, or insufficient historical data
Head Office	10,116	60%	16,832	20	55%	37	Small number of portfolios	Small number of portfolios
Group Total	195,681	26%	748,832	25,355	26%	96,126		

Barclays' AIRB roll-out plans are discussed with regulators and updated on an agreed schedule.

Barclays has permission to use the Internal Model Method (IMM) to calculate its counterparty credit risk exposures. The permission is comprehensive and applies to the majority of its trades and portfolios. Exceptions include certain contracts entered into by Barclays Capital Inc, for instance exchange traded derivatives.

Scope of permission for calculation approaches

Table 3: Summary of the scope of application of regulatory methodologies for CVA, market and operational risk

As at 31 December 2018 Risk Type	Risk weighted assets	Scope
Credit value adjustment	3,409	Barclays calculates Credit Valuation Adjustment (CVA) risk for all contracts in scope as defined by article 382 of the Capital Requirements Regulation. Barclays has permission to use an internal model for the specific risk of debt instruments and therefore is allowed to use the Advanced method for CVA for such instruments where applicable. The Standardised method for CVA is used otherwise.
Market risk	30,821	As explained on page 165, the risk of loss from changes in the prices of assets in the trading book are captured by a combined RWA calculation for general and specific market risks. The regulatory permission for Barclays to use models considers risk types and legal entities; see table 12 on page 27 for capital requirements related to each approach and risk factor. Barclays has regulatory approval for VaR modelling for general market risk, which is designed to capture the risk of loss arising from changes in market interest rates, along with the risk of losses arising from changes in foreign exchange, commodities and equity market value. The capital charge for specific market risk is designed to protect against losses from adverse movements in the price of an individual security owing to factors related to the individual issuer. Barclays has permission to model specific market risk, including credit spread, migration, and default risks, for certain legal entities and product types. Where the Group does not have permission to use a model (notably in Barclays Capital Inc), the Standardised approach is applied.
Operational risk	56,660	Following submission of an application to the PRA, Barclays Group received the PRA's approval to use the Standardised Approach (TSA) for operational risk regulatory capital purposes with effect from 1 April 2018. Barclays Group has conservatively elected to retain its previous operational risk RWA amount unchanged for 2018.

Linkage between financial statements and regulatory risk

Table 4: LI1– Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories

This table shows an outline of the differences in the basis of consolidation for accounting and regulatory purposes. It provides the allocation of the amounts reported under the scope of regulatory consolidation to the different risk categories.

As at 31 December 2018	Carrying values as reported in published financial statements £m	Carrying values under scope of regulatory consolidation ^a £m	Subject to the credit risk framework £m	Subject to the CCR framework £m	Subject to the securitisation framework ^c £m	Subject to the market risk framework ^b £m	Not subject to capital requirements or subject to deduction from capital ^d £m
Assets							
Cash and balances at central banks	177,069	176,978	176,978	–	–	–	–
Cash collateral and settlement balances	77,222	77,222	12,583	43,856	–	16,913	20,783
Loans and advances at amortised cost	326,406	320,509	316,887	–	3,622	–	–
Reverse repurchase agreements and other similar secured lending	2,308	2,308	–	2,308	–	48	–
Trading portfolio assets	104,187	106,900	6,279	–	197	100,425	–
Financial assets at fair value through the income statement	149,648	149,486	12,485	130,799	–	136,992	–
Derivative financial instruments	222,538	222,441	5	220,583	93	221,850	1,730
Financial investments	–	–	–	–	–	–	–
Financial assets at fair value through other comprehensive income	52,816	52,925	52,876	–	49	–	–
Investments in associates and joint ventures	762	284	284	–	–	–	–
Goodwill and intangible assets	7,973	8,000	–	–	–	–	8,000
Property, plant and equipment	2,535	2,545	2,545	–	–	–	–
Current tax assets	798	798	798	–	–	–	–
Deferred tax assets	3,828	3,818	3,298	–	–	–	520
Retirement benefit assets	1,768	1,768	–	–	–	–	1,768
Other assets	3,425	5,098	5,098	–	–	–	–
Assets included in disposal groups classified as held for sale	–	–	–	–	–	–	–
Total assets	1,133,283	1,131,080	590,116	397,546	3,961	476,228	32,801
Liabilities							
Deposits at amortised cost	394,838	394,760	–	–	–	1,346	393,414
Cash collateral and settlement balances	67,522	67,522	–	53,159	–	23,639	14,361
Repurchase agreements and other similar secured borrowing	18,578	18,578	–	2,552	–	1,569	14,457
Debt securities in issue	82,286	75,385	–	–	–	–	75,385
Subordinated liabilities	20,559	20,559	–	–	–	–	20,559
Trading portfolio liabilities	37,882	40,425	–	–	–	37,884	2,541
Financial liabilities designated at fair value	216,834	216,834	–	152,708	–	209,242	9,809
Derivative financial instruments	219,643	219,643	–	214,656	1,255	218,909	3,712
Current tax liabilities	628	621	–	–	–	–	621
Deferred tax liabilities	51	51	–	–	–	–	51
Retirement benefit liabilities	315	315	–	–	–	–	315
Other liabilities	7,716	9,850	–	–	–	–	9,850
Provisions	2,652	2,651	–	–	–	–	2,651
Liabilities included in disposal groups classified as held for sale	–	–	–	–	–	–	–
Total liabilities	1,069,504	1,067,194	–	423,075	1,255	492,589	547,726

The following points should be considered in conjunction with table LI1:

- The balances shown in column “Carrying values under scope of regulatory consolidation” do not equal the sum of those in the columns relating to the regulatory framework, as certain assets can be in scope for more than one regulatory framework. As such, assets included in line items for “Cash collateral and settlement balances”, “Reverse repurchase agreements and other similar secured lending”, “Financial assets at fair value through the income statement”, and “Derivative financial instruments,” can be subject to credit risk, counterparty credit risk and market risk.
- The column “Subject to market risk framework” is based on trading book asset, as shown in the table “balance sheet split by trading and banking books” see page 116
- The column “subject to securitisation framework” includes non-trading book positions only. Trading book securitisation positions are included in the “subject to the market risk framework” column.
- For liabilities, balances shown in column “Not subject to capital requirements or subject deduction from capital” are balancing amount so that “Carrying values under scope of regulatory consolidation” at least equals to the sum of those in the columns relating to the regulatory framework.

Information regarding the market risk valuation methodologies, independent price verifications process and procedures for valuation adjustments or reserves can be found in the Management of Market risk section from page 164

Scope of application of Basel rules

Linkage between financial statements and regulatory risk

Table 5: LI2 – Main sources of differences between regulatory exposure amounts and carrying values in financial statements

This table provides the main sources of differences between the financial statement amounts and the exposure amount used for regulatory purposes as shown in table 4 above.

As at 31 December 2018	Total ^a £m	Subject to the credit risk framework £m	Subject to the CCR framework £m	Subject to the securitisation framework £m
Assets carrying value amount under the scope of regulatory consolidation (as per template LI1)	991,623	590,116	397,546	3,961
Liabilities carrying value amount under the regulatory scope of consolidation (as per template EU LI1)	(424,330)	–	(423,075)	(1,255)
Total net amount under the regulatory scope of consolidation	567,293	590,116	(25,529)	2,706
Off-balance sheet amounts ^b	885,755	129,990	541,718	1,537
Differences in valuations	2,075	231	1,087	757
Differences in netting rules	(446,931)	–	(446,931)	–
Differences due to consideration of provisions	3,920	3,920	–	–
Differences due to prudential filters	–	–	–	–
Differences between input balance and modelled regulatory output	41,142	14,110	27,032	–
Regulatory exclusion – CCP trades for a client where Barclays acts as a clearing member on behalf of a counterparty	(360)	–	(360)	–
Credit Enhancement Exposure for Sponsor trades	6,679	–	–	6,679
Exposure of Synthetic Securitisation trades	20,086	(3,417)	–	23,503
Other	(81)	177	–	(258)
Exposure amounts considered for regulatory purposes	1,079,578	735,127	97,017	34,924

The following points should be considered in conjunction with table LI2:

- a The total column cannot be directly reconciled back to the carrying values under scope of consolidation shown in table 4 - LI1, as it excludes balances “subject to the market risk framework” and items “not subject to capital requirements or subject to deduction from capital”.
- b In line item “Off-balance sheet amounts”, the amounts shown in the Total column, which relates to exposures pre-CCF, do not equal the sum of the amounts shown in the remaining columns, as these are post-CCF.

Table 6: LI3 Outline of the differences in the scopes of consolidation (entity by entity)

Name of the entity	Method of accounting consolidation	Method of regulatory consolidation			Description of the entity
		Full consolidation	Proportional consolidation	Neither consolidated nor deducted ^a	
Barclays Insurance Services Company Limited	Fully consolidated			●	Activities auxiliary to financial services and insurance activities
Barclays Insurance Guernsey PCC Limited	Fully consolidated			●	Insurance, reinsurance and pension funding, except compulsory social security
Care Principles PropCo1 Limited	Fully consolidated			●	Other services activities
Care Principles PropCo2 Limited	Fully consolidated			●	Other services activities
CP Topco Limited	Fully consolidated			●	Other services activities
Salisbury Receivables Company LLC	Fully consolidated			●	Financial service activities, except insurance and pension funding
Barclays Insurance U.S. Inc.	Fully consolidated			●	Insurance, reinsurance and pension funding, except compulsory social security
CP Flower Guaranteeco (UK) Limited	Fully consolidated			●	Other services activities
Sheffield Receivables Company LLC	Fully consolidated			●	Financial service activities, except insurance and pension funding
Sunderland Receivables Company LLC	Fully consolidated			●	Financial service activities, except insurance and pension funding
Vaultex UK Limited	Proportionally consolidated			●	Activities auxiliary to financial services and insurance activities
Crescent Legacy LLC	Equity			●	Real estate activities
Intelligent Processing Solutions Limited	Equity			●	Activities auxiliary to financial services and insurance activities
Sabine Oil & Gas Holdings, Inc	Equity			●	Extraction of crude petroleum and natural gas
EnterCard Group AB	Equity		●		Financial service activities, except insurance and pension funding
BGF Limited	Equity		●		Financial service activities, except insurance and pension funding
RS2 Software PLC	Equity		●		Financial service activities, except insurance and pension funding
Palomino Limited	Not consolidated	●			Financial service activities, except insurance and pension funding

Note

- a Column “neither consolidated nor deducted” is subject to capital requirements.

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Analysis of treasury and capital risk

This section details Barclays' capital position providing information on capital resources, requirements, leverage and liquidity.

Key Metrics in 2018

Common Equity Tier 1 ratio

13.2%

UK leverage ratio

5.1%

Average UK leverage ratio

4.5%

CRR leverage ratio

4.3%

Liquidity Coverage ratio

169%

Analysis of treasury and capital risk

Table 7: KM1 - Key metrics and movements

	As at 31.12.18 £m	As at 30.09.18 £m	As at 30.06.18 £m	As at 31.03.18 £m	As at 31.12.17 £m
Available capital (amounts)					
1 Common Equity Tier 1 (CET1) ^a	41,100	41,744	41,398	40,246	41,565
1a Fully loaded Expected Credit Loss (ECL) accounting model ^b	39,815	40,458	40,096	38,932	41,565
2 Tier 1 ^c	52,998	55,202	53,049	52,110	53,914
2a Fully loaded ECL accounting model Tier 1 ^d	49,317	51,171	48,904	47,743	50,376
3 Total capital ^e	64,594	67,195	65,421	64,548	67,175
3a Fully loaded ECL accounting model total capital ^d	61,848	64,519	62,813	61,560	64,646
Risk-weighted assets (amounts)					
4 Total risk-weighted assets (RWA) ^a	311,926	316,167	319,299	317,946	313,033
4a Fully loaded ECL accounting model total risk-weighted assets (RWA) ^b	311,798	316,039	319,171	317,970	313,033
Risk-based capital ratios as a percentage of RWA					
5 Common Equity Tier 1 ratio (%)	13.2%	13.2%	13.0%	12.7%	13.3%
5a Fully loaded ECL accounting model Common Equity Tier 1 (%)	12.8%	12.8%	12.6%	12.2%	13.3%
6 Tier 1 ratio (%)	17.0%	17.5%	16.6%	16.4%	17.2%
6a Fully loaded ECL accounting model Tier 1 ratio (%)	15.8%	16.2%	15.3%	15.0%	16.1%
7 Total capital ratio (%)	20.7%	21.3%	20.5%	20.3%	21.5%
7a Fully loaded ECL accounting model total capital ratio (%)	19.8%	20.4%	19.7%	19.4%	20.7%
Additional CET1 buffer requirements as a percentage of RWA					
8 Capital conservation buffer requirement (%)	1.9%	1.9%	1.9%	1.9%	1.3%
9 Countercyclical buffer requirement (%)	0.5%	0.3%	0.3%	0.0%	0.0%
10 Bank G-SIB and/or D-SIB additional requirements (%)	1.1%	1.1%	1.1%	1.1%	1.0%
11 Total of bank CET1 specific buffer requirements(%) (row 8 + 9 + 10)	3.5%	3.3%	3.3%	3.0%	2.3%
12 CET1 available after meeting the bank's minimum capital requirements (%)	8.7%	8.7%	8.5%	8.2%	8.8%
CRR leverage ratio					
13 Total CRR leverage ratio exposure measure	1,142,520	1,191,085	1,163,773	1,169,217	1,124,521
14 Fully loaded CRR leverage ratio (%)	4.3%	4.3%	4.2%	4.1%	4.5%
Average UK leverage ratio (Transitional)^{e, f}					
13a Total average UK leverage ratio exposure measure ^g	1,109,988	1,119,044	1,081,840	1,089,910	1,044,560
14a Transitional average UK leverage ratio (%)	4.5%	4.6%	4.6%	4.6%	4.9%
UK leverage ratio (Transitional)^{e, f}					
13b Total UK leverage ratio exposure measure	998,556	1,063,472	1,030,145	1,030,784	984,710
14b Transitional UK leverage ratio (%)	5.1%	4.9%	4.9%	4.8%	5.1%
Liquidity Coverage Ratio					
15 Total HQLA	218,766	210,681	207,989	203,591	214,637
16 Total net cash outflows	129,172	130,925	134,712	138,436	139,760
17 LCR ratio (%)	169%	161%	154%	147%	154%

Notes

a CET1 capital and RWAs are calculated applying the transitional arrangements of the CRR. This includes IFRS 9 transitional arrangements.

b Fully loaded CET1 capital and RWAs are calculated without applying the transitional arrangements of the CRR.

c Transitional Tier 1 and Total capital include AT1 and T2 capital that are calculated applying the grandfathering of CRR non-compliant capital instruments.

d Fully loaded Tier 1 and Total capital include AT1 and T2 capital that are calculated without applying the grandfathering of CRR non-compliant capital instruments.

e Transitional UK leverage ratios are calculated applying the IFRS 9 transitional arrangements and in line with the PRA Handbook, which excludes grandfathered AT1 instruments allowed under CRR.

f Fully loaded average UK leverage ratio was 4.4%, with £1,109bn of leverage exposure. Fully loaded UK leverage ratio was 4.9%, with £997bn of leverage exposure. Fully loaded UK leverage ratios are calculated without applying the transitional arrangements of the CRR.

g Average UK leverage exposure uses an exposure measure for each day in the quarter. For periods prior to 1 January 2018 the exposure measure was based on the last day of each month in the quarter.

Analysis of treasury and capital risk

Capital

Barclays' fully loaded CET1 regulatory requirement is 11.7% comprising a 4.5% Pillar 1 minimum, a 2.5% Capital Conservation Buffer (CCB), a 1.5% Global Systemically Important Institution (G-SII) buffer, a 2.7% Pillar 2A requirement applicable from 1 January 2019, and a 0.5% Countercyclical Capital Buffer (CCyB).

The CCB and the G-SII buffer, determined by the PRA in line with guidance from the Financial Stability Board (FSB), are subject to phased implementation at 25% per annum from 2016 with full effect from 2019. The CCB has been set at 2.5% with 1.9% applicable for 2018. The G-SII buffer for 2018 has been set at 1.5% with 1.1% applicable for 2018. The FSB confirmed that the G-SII buffer will remain at 1.5% applicable for 2019 and 2020.

The Barclays CCyB is based on the buffer rate applicable for each jurisdiction in which Barclays have exposures. On 28 November 2018, the Financial Policy Committee (FPC) increased the CCyB rate for UK exposures from 0.5% to 1%. The buffer rates set by other national authorities for our non-UK exposures are not currently material. Overall, this results in a 0.5% CCyB for Barclays for Q418.

Barclays' Pillar 2A requirement as per the PRA's Individual Capital Requirement for 2018 is 4.3%, of which at least 56.25% needs to be met in CET1 form, equating to approximately 2.4% of RWAs. Certain elements of the Pillar 2A requirement are a fixed quantum whilst others are a proportion of RWAs and are based on a point in time assessment. The Pillar 2A requirement is subject to at least annual review.

As at 31 December 2018, Barclays' transitional CET1 ratio was 13.2% which exceeded the 2018 transitional minimum requirement of 10.4% comprising a 4.5% Pillar 1 minimum, a 1.9% CCB, a 1.1% G-SII buffer, a 0.5% CCyB and a 2.4% Pillar 2A requirement.

Table 8: Capital resources

This table shows the Group's capital resources. Table 10 presents the components of regulatory capital on both a transitional and fully loaded basis as at 31 December 2018.

Capital ratios^{a,b,c}		
	As at 31.12.18	As at 31.12.17
CET1	13.2%	13.3%
Tier 1 (T1)	17.0%	17.2%
Total regulatory capital	20.7%	21.5%

Capital resources		
	£m	£m
Total equity excluding non-controlling interests per the balance sheet	62,556	63,905
Less: other equity instruments (recognised as AT1 capital)	(9,632)	(8,941)
Adjustment to retained earnings for foreseeable dividends	(731)	(392)
Other regulatory adjustments and deductions		
Additional value adjustments (PVA)	(1,746)	(1,385)
Goodwill and intangible assets	(7,983)	(7,908)
Deferred tax assets that rely on future profitability excluding temporary differences	(520)	(593)
Fair value reserves related to gains or losses on cash flow hedges	(660)	(1,161)
Excess of expected losses over impairment	–	(1,239)
Gains or losses on liabilities at fair value resulting from own credit	(52)	83
Defined benefit pension fund assets	(1,335)	(732)
Direct and indirect holdings by an institution of own CET1 instruments	(50)	(50)
Adjustment under IFRS 9 transitional arrangements	1,285	–
Other regulatory adjustments	(32)	(22)
CET1 capital	41,100	41,565
AT1 capital		
Capital instruments and related share premium accounts	9,632	8,941
Qualifying AT1 capital (including minority interests) issued by subsidiaries	2,396	3,538
Other regulatory adjustments and deductions	(130)	(130)
AT1 capital	11,898	12,349
T1 capital	52,998	53,914
T2 capital		
Capital instruments and related share premium accounts	6,566	6,472
Qualifying T2 capital (including minority interests) issued by subsidiaries	5,275	7,040
Credit risk adjustments (excess of impairment over expected losses)	5	–
Other regulatory adjustments and deductions	(250)	(251)
Total regulatory capital	64,594	67,175
Total RWAs	311,926	313,033

Notes

- a CET1, T1 and T2 capital, and RWAs are calculated applying the transitional arrangements of the CRR. This includes IFRS 9 transitional arrangements and the grandfathering of CRR non-compliant capital instruments.
- b The fully loaded CET1 ratio, as is relevant for assessing against the conversion trigger in Barclays PLC additional tier 1 (AT1) securities, was 12.8%, with £39.8bn of CET1 capital and £311.8bn of RWAs calculated without applying the transitional arrangements of the CRR.
- c The Barclays PLC CET1 ratio, as is relevant for assessing against the conversion trigger in Barclays Bank PLC T2 Contingent Capital Notes, was 13.2%. For this calculation CET1 capital and RWAs are calculated applying the transitional arrangements under the CRR, including the IFRS 9 transitional arrangements. The benefit of the Financial Services Authority (FSA) October 2012 interpretation of the transitional provisions, relating to the implementation of CRD IV, expired in December 2017.

Analysis of treasury and capital risk

Table 9: Summary of movements in capital resources

Movement in CET1 capital	Year ended 31.12.18 £m
Opening CET1 capital	41,565
Effects of changes in accounting policies	(2,150)
Profit for the period attributable to equity holders	2,146
Own credit relating to derivative liabilities	(77)
Dividends paid and foreseen	(1,656)
Increase in retained regulatory capital generated from earnings	413
Net impact of share schemes	90
Fair value through other comprehensive income reserve	(486)
Currency translation reserve	834
Other reserves	(1,027)
Decrease in other qualifying reserves	(589)
Pension remeasurements within reserves	313
Defined benefit pension fund asset deduction	(603)
Net impact of pensions	(290)
Additional value adjustments (PVA)	(361)
Goodwill and intangible assets	(75)
Deferred tax assets that rely on future profitability excluding those arising from temporary differences	73
Excess of expected loss over impairment	1,239
Adjustment under IFRS 9 transitional arrangements	1,285
Other regulatory adjustments	(10)
Increase in regulatory capital due to adjustments and deductions	2,151
Closing CET1 capital	41,100

CET1 capital decreased £0.5bn to £41.1bn.

£4.2bn of organic capital generated from profits was more than offset by £2.1bn of litigation and conduct charges, as the Barclays Group resolved legacy matters, as well as the following significant items:

- £1.7bn of dividends paid and foreseen for ordinary dividends and AT1 coupons
- A £1bn decrease in other qualifying reserves following the redemption of the legacy \$2.65bn 8.125% Series Non-Cumulative Callable Dollar Preference Shares and \$2bn 8.25% AT1 securities due to these instruments being held on the balance sheet at historical FX rates
- A £0.3bn decrease as a result of movements relating to pensions, largely due to deficit contribution payments of £0.25bn in April 2018 and £0.25bn in September 2018

The implementation of IFRS 9 resulted in a net increase in CET1 capital as the initial decrease in shareholders' equity of £2.2bn on implementation was more than offset by the transitional relief of £1.3bn and the removal of £1.2bn of regulatory deduction for the excess of expected loss over impairment.

Analysis of treasury and capital risk

Table 10: Regulatory capital

This table shows the components of regulatory capital presented on both a transitional and fully loaded basis as at 31 December 2018.

This disclosure has been prepared using the format set out in Annex IV and Annex VI of the final 'Implementing technical standards with regard to disclosure of own funds requirements for institution' (Commission implementing regulation- EU 1423/2013)

		Barclays Group		Barclays Bank PLC		Barclays Bank UK PLC	
		As at 31.12.18 Transitional position £m	As at 31.12.18 Fully loaded position £m	As at 31.12.18 Transitional position £m	As at 31.12.18 Fully loaded position £m	As at 31.12.18 Transitional position £m	As at 31.12.18 Fully loaded position £m
1	Capital instruments and the related share premium accounts <i>of which: ordinary shares</i>	4,311	4,311	2,343	2,343	5	5
2	Retained earnings	43,460	43,460	30,021	30,021	14,771	14,771
3	Accumulated other comprehensive income (and other reserves)	5,153	5,153	383	383	178	178
5a	Independently reviewed interim net profits net of any foreseeable charge or dividend ^a	(731)	(731)	(38)	(38)	(706)	(706)
	Scope of consolidation adjustment	(32)	(32)	316	316	–	–
6	Common Equity Tier 1 (CET1) capital before regulatory adjustments	52,161	52,161	33,025	33,025	14,248	14,248
Common Equity Tier 1 (CET1) capital: regulatory adjustments							
7	Additional value adjustments	(1,746)	(1,746)	(1,300)	(1,300)	(150)	(150)
8	Intangible assets (net of related tax liability)	(7,983)	(7,983)	(155)	(155)	(3,629)	(3,629)
10	Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liability)	(520)	(520)	(167)	(167)	–	–
11	Fair value reserves related to gains or losses on cash flow hedges	(660)	(660)	123	123	(20)	(20)
12	Negative amounts resulting from the calculation of expected losses amounts	–	–	(229)	(229)	–	–
14	Gains or losses on liabilities at fair value resulting from changes in own credit standing	(52)	(52)	(52)	(52)	–	–
15	Defined-benefit pension fund assets	(1,335)	(1,335)	(1,315)	(1,315)	–	–
16	Direct and indirect holdings by an institution of own CET1 instruments	(50)	(50)	–	–	–	–
19	Direct, indirect and synthetic holdings of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities (amount above 10% threshold and net of eligible short positions) (negative amount)	–	–	(6,289)	(7,358)	–	–
22	Amount exceeding the 17.65% threshold	–	–	(703)	(1,105)	–	–
23	<i>of which: direct and indirect holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities</i>	–	–	(507)	(764)	–	–
25	<i>of which: deferred tax assets arising from temporary difference Adjustment under IFRS 9 transitional arrangements^b</i>	1,285	–	456	–	250	–
28	Total regulatory adjustments to Common Equity Tier 1 (CET1)	(11,061)	(12,346)	(9,631)	(11,558)	(3,549)	(3,799)
29	Common Equity Tier 1 (CET1) capital	41,100	39,815	23,394	21,467	10,699	10,449

Notes

a Adjustment to retained earnings for foreseeable dividends only.

b Group of which static £1,212m, of which modified £73m; BB PLC of which static £456m, of which modified £0m; BBUK PLC of which static £0m, of which modified £250m.
For more information, see page 24

Analysis of treasury and capital risk

Table 10: Regulatory capital (continued)

	Barclays Group		Barclays Bank PLC		Barclays Bank UK PLC	
	As at 31.12.18 Transitional position £m	As at 31.12.18 Fully loaded position £m	As at 31.12.18 Transitional position £m	As at 31.12.18 Fully loaded position £m	As at 31.12.18 Transitional position £m	As at 31.12.18 Fully loaded position £m
Additional Tier 1 (AT1) capital: instruments						
30 Capital instruments and the related share premium accounts	9,632	9,632	7,595	7,595	2,070	2,070
31 <i>of which: classified as equity under IFRS</i>	9,632	9,632	7,595	7,595	2,070	2,070
33 Amount of qualifying items referred to in Article 484 (4) and the related share premium accounts subject to phase out from AT1	–	–	3,065	–	–	–
34 Qualifying Tier 1 capital included in consolidated AT1 capital (including minority interests) issued by subsidiaries and held by third parties	2,396	–	–	–	–	–
35 <i>of which: instruments issued by subsidiaries subject to phase out</i>	3,065	–	–	–	–	–
36 Additional Tier 1 (AT1) capital before regulatory adjustments	12,028	9,632	10,660	7,595	2,070	2,070
Additional Tier 1 (AT1) capital: regulatory adjustments						
37 Direct and indirect holdings by an institution of own AT1 instruments	(130)	(130)	(130)	(130)	–	–
40 Direct, indirect and synthetic holdings of the AT1 instruments of financial sector entities where the institution has a significant investment in those entities (amount above 10% threshold and net of eligible short positions) (negative amount)	–	–	(2,022)	(2,191)	–	–
43 Total regulatory adjustments to Additional Tier 1 (AT1) capital	(130)	(130)	(2,152)	(2,321)	–	–
44 Additional Tier 1 (AT1) capital	11,898	9,502	8,508	5,274	2,070	2,070
45 Tier 1 capital (T1 = CET1 + AT1)	52,998	49,317	31,902	26,741	12,769	12,519
Tier 2 (T2) capital: instruments and provisions						
46 Capital instruments and the related share premium accounts	6,566	6,566	9,364	10,107	3,195	3,195
47 Amount of qualifying items referred to in Article 484 (5) and the related share premium accounts subject to phase out from T2	–	–	450	–	–	–
48 Qualifying own funds instruments included in T2 capital (including minority interests) issued by subsidiaries and held by third parties	5,275	6,051	–	–	–	–
49 <i>of which: instruments issued by subsidiaries subject to phase out</i>	450	–	–	–	–	–
50 Credit risk adjustments	5	164	–	–	91	336
51 Tier 2 capital before regulatory adjustments	11,846	12,781	9,814	10,107	3,286	3,531
Tier 2 capital: regulatory adjustments						
52 Direct and indirect holdings of own T2 instruments and subordinated loans	(250)	(250)	(250)	(250)	–	–
54 Direct, indirect and synthetic holdings of the T2 instruments and subordinated loans of financial sector entities where the institution does not have a significant investment in those entities (amount above 10 % threshold and net of eligible short positions) (negative amount)	–	–	–	–	–	–
55 Direct and indirect holdings by the institution of T2 instruments and subordinated loans of financial sector entities where the institution has a significant investment in those entities (net of eligible short positions)	–	–	(3,027)	(3,420)	–	–
57 Total regulatory adjustments to Tier 2 capital	(250)	(250)	(3,277)	(3,670)	–	–
58 Tier 2 capital	11,596	12,531	6,537	6,437	3,286	3,531
59 Total capital (TC = T1 + T2)	64,594	61,848	38,439	33,178	16,055	16,050

Analysis of treasury and capital risk

Table 10: Regulatory capital (continued)

	Barclays Group		Barclays Bank PLC		Barclays Bank UK PLC	
	As at 31.12.18 Transitional position £m	As at 31.12.18 Fully loaded position £m	As at 31.12.18 Transitional position £m	As at 31.12.18 Fully loaded position £m	As at 31.12.18 Transitional position £m	As at 31.12.18 Fully loaded position £m
60 Total risk weighted assets	311,926	311,798	173,200	170,011	75,327	75,449
Capital ratios and buffers						
61 Common Equity Tier 1 (as a percentage of risk exposure amount)	13.2%	12.8%	13.5%	12.6%	14.2%	13.8%
62 Tier 1 (as a percentage of risk exposure amount)	17.0%	15.8%	18.4%	15.7%	17.0%	16.6%
63 Total capital (as a percentage of risk exposure amount)	20.7%	19.8%	22.2%	19.5%	21.3%	21.3%
64 Institution specific buffer requirement (CET1 requirement in accordance with article 92 (1) (a) plus capital conservation and countercyclical buffer requirements, plus systemic risk buffer, plus the systemically important institution buffer (G-SII or O-SII buffer) expressed as a percentage of risk exposure amount)	8.0%	9.0%	6.8%	7.4%	7.4%	8.0%
65 of which: capital conservation buffer requirement	1.9%	2.5%	1.9%	2.5%	1.9%	2.5%
66 of which: countercyclical buffer requirement	0.5%	0.5%	0.4%	0.4%	1.0%	1.0%
67a of which: Global Systemically Important Institution (G-SII) or Other Systemically Important Institution (O-SII) buffer	1.1%	1.5%	0.0%	0.0%	0.0%	0.0%
68 Common Equity Tier 1 available to meet buffers (as a percentage of risk exposure amount)	8.7%	8.3%	9.0%	8.1%	9.7%	9.3%
Amounts below the thresholds for deduction (before risk weighting)						
72 Direct and indirect holdings of the capital of financial sector entities where the institution does not have a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	2,732	2,732	2,395	2,395	–	–
73 Direct and indirect holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	1,248	1,248	3,039	2,993	200	220
75 Deferred tax assets arising from temporary differences (amount below 10% threshold, net of related tax liability)	3,229	3,587	1,174	1,332	721	797
Applicable caps on the inclusion of provisions in Tier 2						
77 Cap on inclusion of credit risk adjustments in T2 under standardised approach	917	904	672	632	53	53
78 Credit risk adjustments included in T2 in respect of exposures subject to internal rating-based approach (prior to the application of the cap)	5	164	–	–	91	336
79 Cap for inclusion of credit risk adjustments in T2 under internal ratings-based approach	885	891	459	459	357	358
Capital instruments subject to phase out arrangements (only applicable between 1 Jan 2013 and 1 Jan 2022)						
82 Current cap on AT1 instruments subject to phase out arrangements	3,703	–	3,703	–	–	–
84 Current cap on T2 instruments subject to phase out arrangements	1,107	–	1,107	–	–	–

Analysis of treasury and capital risk

IFRS 9

On 1 January 2018, IFRS9 transitional capital arrangements were implemented by Regulation (EU) 2017/2395. Barclays elected to apply the transitional arrangements at both consolidated and individual entity levels and will disclose both transitional and fully loaded CET1 ratios until the end of the transitional period. The transitional benefit is phased out over a 5 year period with 95% applicable for 2018; 85% for 2019; 70% for 2020; 50% for 2021; 25% for 2022 and with no transitional benefit from 2023.

The transitional arrangements, implemented under a modified static approach, allow for transitional relief on the “day 1” impact on adoption of IFRS 9 (static element) and for the increase between “day 1” and the reporting date (modified element), subject to eligibility. For the static element, stage 1, stage 2 and stage 3 provisions are eligible for transition, whereas for the modified element, stage 3 provisions are excluded.

Separate calculations are performed for standardised and advanced IRB portfolios, reflecting the different ways these frameworks take account of provisions. Under the standardised approach, increases in provisions for both the static and modified elements are eligible for transition. Under the advanced approach, for both the static and modified elements, provisions are only eligible for transitional relief to the extent that they exceed regulatory expected loss.

Total increases in impairment allowances as a result of IFRS 9, net of tax, decreases shareholders’ equity through retained earnings. This is somewhat mitigated by the transitional relief applied on eligible impairment.

For regulatory Internal Ratings Based (IRB) exposures, the calculation of capital takes account of the expected loss via a comparison with the impairment allowances. Where regulatory expected losses exceed impairment allowances, the shortfall is deducted from CET1 capital. Where the impairment allowance is higher than expected loss, the excess is added back to tier 2 capital and capped at an amount of 0.6% of IRB RWAs.

The DTAs created from the increase of impairment are also accounted for in the CET1 ratio. When DTAs arising from temporary differences are above the 10% CET1 capital threshold, any excess above the threshold is deducted and those below the threshold are risk weighted at 250% up to the point they reach the 10% CET1 capital threshold.

Standardised RWAs decrease due to the increase in impairment being offset against the Standardised Credit Risk exposures.

Analysis of treasury and capital risk

Table 11: IFRS 9-FL - Comparison of institutions' own funds and capital and leverage ratios with and without the application of transitional arrangements for IFRS 9 or analogous ECLs

		Barclays Group			
		As at 31.12.18 £m	As at 30.09.18 £m	As at 30.06.18 £m	As at 31.03.18 £m
Available capital (amounts)					
1	Common Equity Tier 1 (CET1) capital ^a	41,100	41,744	41,398	40,246
2	Common Equity Tier 1 (CET1) capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	39,815	40,458	40,096	38,932
3	Tier 1 capital ^b	52,998	55,202	53,049	52,110
4	Tier 1 capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	51,713	53,916	51,747	50,796
5	Total capital ^b	64,594	67,195	65,421	64,548
6	Total capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	63,468	65,972	64,277	63,431
Risk-weighted assets (amounts)					
		£m	£m	£m	£m
7	Total risk-weighted assets ^a	311,926	316,167	319,299	317,946
8	Total risk-weighted assets as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	311,798	316,039	319,171	317,970
Capital ratios					
9	Common Equity Tier 1 (as a percentage of risk exposure amount)	13.2%	13.2%	13.0%	12.7%
10	Common Equity Tier 1 (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	12.8%	12.8%	12.6%	12.2%
11	Tier 1 (as a percentage of risk exposure amount)	17.0%	17.5%	16.6%	16.4%
12	Tier 1 (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	16.6%	17.1%	16.2%	16.0%
13	Total capital (as a percentage of risk exposure amount)	20.7%	21.3%	20.5%	20.3%
14	Total capital (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	20.4%	20.9%	20.1%	19.9%
Leverage ratio					
		£m	£m	£m	£m
15	Leverage ratio total exposure measure	1,142,520	1,191,085	1,163,773	1,169,217
16	Leverage ratio ^c	4.3%	4.3%	4.2%	4.1%
17	Leverage ratio as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	4.3%	4.3%	4.2%	4.1%

Notes

a Transitional CET1 capital and RWAs are calculated applying the transitional arrangements of the CRR. This includes IFRS 9 transitional arrangements.

b Transitional T1 and Total capital are calculated applying the transitional arrangements of the CRR. This includes the grandfathering of CRR non-compliant capital instruments and IFRS 9 transitional arrangements.

c Leverage ratio is calculated applying the fully phased in treatment of the CRR.

Analysis of treasury and capital risk

Table 11a: IFRS 9-FL – Comparison of institutions' own funds and capital and leverage ratios with and without the application of transitional arrangements for IFRS 9 or analogous ECLs for significant subsidiaries

	Barclays Bank PLC		Barclays Bank UK PLC	
	As at 31.12.18 £m	As at 30.06.18 £m	As at 31.12.18 £m	As at 30.06.18 £m
Available capital (amounts)				
1 Common Equity Tier 1 (CET1) capital ^a	23,394	24,311	10,699	10,670
2 Common Equity Tier 1 (CET1) capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	22,673	23,586	10,449	10,437
3 Tier 1 capital ^b	31,902	33,015	12,769	12,740
4 Tier 1 capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	31,181	32,289	12,519	12,507
5 Total capital ^b	38,439	41,036	16,055	16,062
6 Total capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	37,718	40,310	16,050	16,032
Risk-weighted assets (amounts)				
	£m	£m	£m	£m
7 Total risk-weighted assets ^a	173,200	187,584	75,327	75,640
8 Total risk-weighted assets as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	172,559	186,929	75,429	75,769
Capital ratios				
9 Common Equity Tier 1 (as a percentage of risk exposure amount)	13.5%	13.0%	14.2%	14.1%
10 Common Equity Tier 1 (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	13.1%	12.6%	13.9%	13.8%
11 Tier 1 (as a percentage of risk exposure amount)	18.4%	17.6%	17.0%	16.8%
12 Tier 1 (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	18.1%	17.3%	16.6%	16.5%
13 Total capital (as a percentage of risk exposure amount)	22.2%	21.9%	21.3%	21.2%
14 Total capital (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	21.9%	21.6%	21.3%	21.2%
Leverage ratio				
	£m	£m	£m	£m
15 Leverage ratio total exposure measure	791,406	807,743	258,091	252,055
16 Leverage ratio ^c	4.0%	4.1%	4.9%	5.1%
17 Leverage ratio as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	4.0%	4.0%	4.9%	5.0%

Notes

a Transitional CET1 capital and RWAs are calculated applying the transitional arrangements of the CRR. This includes IFRS 9 transitional arrangements.

b Transitional T1 and Total capital are calculated applying the transitional arrangements of the CRR. This includes the grandfathering of CRR non-compliant capital instruments and IFRS 9 transitional arrangements.

c Leverage ratio is calculated applying the grandfathering of CRR non-compliant capital instruments and with the application of the IFRS9 transitional arrangements.

Analysis of treasury and capital risk

Table 12: Risk weighted assets by risk type and business

This table shows risk weighted assets by business and risk type.

Risk weighted assets (RWAs) by risk type and business										
	Credit risk		Counterparty credit risk				Market risk		Operational risk £m	Total RWAs £m
	Std £m	A-IRB £m	Std £m	A-IRB £m	Settlement risk £m	CVA £m	Std £m	IMA £m		
As at 31.12.18										
Barclays UK Barclays International Head Office	3,285 55,591 4,339	59,734 66,955 5,777	229 9,887 7	– 15,049 13	– 170 –	35 3,343 31	63 13,913 –	– 16,845 –	11,835 28,989 15,836	75,181 210,742 26,003
Barclays Group	63,215	132,466	10,123	15,062	170	3,409	13,976	16,845	56,660	311,926
As at 31.12.17										
Barclays UK Barclays International Head Office	3,811 49,058 2,907	54,955 69,520 9,766	– 17,000 65	– 17,243 633	– 101 –	– 2,776 225	– 13,313 88	– 13,547 1,365	12,167 27,708 16,785	70,933 210,266 31,834
Barclays Group	55,776	134,241	17,065	17,876	101	3,001	13,401	14,912	56,660	313,033

For commentary on the movement in risk weighted assets see Table 30, 63, 75, 80 and 92.

Table 12a: Risk weighted assets by significant subsidiaries

	Credit risk		Counterparty credit risk				Market risk		Operational risk £m	Total RWAs £m
	Std £m	A-IRB £m	Std £m	A-IRB £m	Settlement risk £m	CVA £m	Std £m	IMA £m		
As at 31.12.18										
Barclays Bank PLC	45,837	63,153	7,927	13,349	314	3,331	6,786	16,684	15,819	173,200
Barclays Bank UK PLC	3,985	59,484	266	–	–	11	63	–	11,518	75,327

BB PLC primarily consists of the Corporate and Investment Bank (CIB), Consumer, Cards and Payments and Head Office. These are part of Barclays International business segment that is included within Barclays PLC Group. The difference between BB PLC and Barclays International is largely due to subsidiaries of BB PLC Group that are not included within the regulatory scope of BB PLC.

BBUK PLC is the UK ring-fenced bank largely comprising Personal Banking, Barclaycard Consumer UK and Business Banking. These are part of Barclays UK business segment that is included within Barclays PLC Group.

Analysis of treasury and capital risk

Table 13: OV1 - Overview of risk weighted assets by risk type and capital requirements

The table shows RWAs, split by risk type and approach. For credit risk, RWAs are shown by credit exposure class.

	RWA		Minimum Capital Requirements	
	As at 31 December 2018	As at 31 December 2017	As at December 2018	As at December 2017
	£m	£m	£m	£m
1 Credit risk (excluding counterparty credit risk) (CCR)	179,816	177,869	14,306	14,230
2 Of which standardised approach	60,096	55,437	4,808	4,435
3 Of which the foundation IRB (FIRB) approach	–	–	–	–
4 Of which the advanced IRB (AIRB) approach	119,720	122,432	9,499	9,795
5 Of which Equity IRB under the Simple risk-weight or the internal models approach	–	–	–	–
6 CCR	28,472	37,843	2,278	3,027
7 Of which mark to market	2,152	2,515	172	201
8 Of which original exposure	–	–	–	–
9 Of which standardised approach	–	–	–	–
9a Of which financial collateral comprehensive method	3,287	9,768	263	781
10 Of which internal model method	18,669	21,299	1,494	1,704
11 Of which risk exposure amount for contributions to the default fund of a CCP	955	1,261	76	101
12 Of which CVA	3,409	3,001	273	240
13 Settlement risk	170	101	14	8
14 Securitisation exposures in banking book (after cap)	4,809	4,169	385	333
14a Of which capital deduction approach (CAPD)	26	39	2	3
14b Of which look through approach (KIRB)	346	621	28	50
15 Of which IRB approach	3,933	3,107	315	249
16 Of which IRB supervisory formula approach (SFA)	–	–	–	–
17 Of which internal assessment approach (IAA)	504	401	40	32
18 Of which standardised approach	–	–	–	–
19 Market risk	30,821	28,313	2,466	2,265
20 Of which the standardised approach	13,976	13,401	1,118	1,072
21 Of which IMA	16,845	14,912	1,348	1,193
22 Large exposures	–	–	–	–
23 Operational risk	56,660	56,660	4,533	4,533
24 Of which basic indicator approach	–	3,252	–	260
25 Of which standardised approach	56,660	–	4,533	–
26 Of which advanced measurement approach	–	53,408	–	4,273
27 Amounts below the thresholds for deduction (subject to 250% risk weight)	11,178	8,079	973	646
28 Floor Adjustments	–	–	–	–
29 Total	311,926	313,033	24,955	25,043

For further detail on movements in RWAs for each risk type please see Analysis of credit risk (page 41), Analysis of counterparty credit risk (page 96), Analysis of market risk (page 115), Analysis of securitisation exposures (page 121) and Analysis of operational risk (page 132).

Analysis of treasury and capital risk

Table 14: Movements in risk weighted assets

The below tables show movements in RWAs, split by risk types and macro drivers

Movement analysis of risk weighted assets					
	Credit Risk £bn	Counterparty Credit Risk ^a £bn	Market Risk £bn	Operational Risk £bn	Total £bn
As at 1 January 2018	190.0	38.0	28.3	56.7	313.0
Book size	6.8	(0.6)	2.2	–	8.4
Acquisitions and disposals	(3.6)	(0.3)	(0.2)	–	(4.1)
Book quality	(2.9)	(0.5)	–	–	(3.4)
Model updates	–	–	–	–	–
Methodology and policy	2.2	(7.8)	0.5	–	(5.1)
Foreign exchange movement ^b	3.1	–	–	–	3.1
As at 31 December 2018	195.6	28.8	30.8	56.7	311.9

Notes:

a RWAs in relation to default fund contributions are included in counterparty credit risk.

b Foreign exchange movement does not include FX for counterparty risk or market risk.

Total RWA movement

RWAs decreased £1.1bn to £311.9bn:

- Book size increased RWAs £8.4bn primarily due to increased lending activity within the Investment Banking and Consumer, Cards & Payments businesses
- Acquisitions and disposals decreased RWAs £4.1bn primarily due to the regulatory deconsolidation of BAGL
- Book quality decreased RWAs £3.4bn primarily due to changes in risk profile within Barclays International
- Methodology and policy decreased RWAs £5.1bn primarily due to an extended regulatory permission to use the modelled exposure measurement approach
- Foreign exchange movements increased RWAs £3.1bn primarily due to the appreciation of period end USD against GBP

Tables 15, 16 and 17 below show a subset of the information included in table 14, focused on positions captured under modelled treatment.

Table 15: CR8 - RWA flow statement of credit risk exposures under the AIRB approach

	RWA amount £bn	Capital requirements £bn
1 As at 1 January 2018	134.2	10.7
2 Asset size	–	–
3 Asset quality	(2.5)	(0.2)
4 Model updates	–	–
5 Methodology and policy	2.7	0.2
6 Acquisitions and disposals	(3.9)	(0.3)
7 Foreign exchange movements	2.0	0.2
8 Other	–	–
9 As at 31 December 2018	132.5	10.6

Total RWA movement

Advanced credit risk RWAs decreased RWAs £1.7bn to £132.5bn driven by:

- Asset quality decreased RWAs £2.5bn primarily due to changes in risk profile within Barclays International
- Methodology and policy increased RWAs £2.7bn primarily due to changes in the regulatory methodology for the ESHLA portfolio
- Acquisitions and disposals decreased RWAs £3.9bn primarily due to the regulatory deconsolidation of BAGL
- FX movements increased RWAs £2.0bn primarily due to appreciation of period end USD against GBP

Analysis of treasury and capital risk

Table 16: CCR7 - RWA flow statement of counterparty credit risk exposures under the IMM

The total in this table shows the contribution of IMM exposures to CCR RWAs (under both standardised and AIRB) and will not directly reconcile to CCR AIRB RWAs in table 14

	RWA amount £bn	Capital requirements £bn
1 As at 1 January 2018	21.4	1.7
2 Asset size	(2.6)	(0.2)
3 Credit quality of counterparties	(0.5)	–
4 Model updates (IMM only)	–	–
5 Methodology and policy (IMM only)	0.5	–
6 Acquisitions and disposals	–	–
7 Foreign exchange movements	–	–
8 Other	–	–
9 As at 31 December 2018	18.8	1.5

Total RWA movement

IMM RWAs decreased £2.6bn to £18.8bn primarily due to a reduction in SFT exposures.

Table 17: MR2-B - RWA flow statement of market risk exposures under the IMA

	VaR £bn	SVaR £bn	IRC £bn	CRM £bn	Other £bn	Total RWA £bn	Total Capital requirements £bn
1 As at 1 January 2018	2.8	6.8	3.0	–	2.3	14.9	1.1
2 Movement in risk levels	0.4	2.2	(1.2)	–	0.5	1.9	0.2
3 Model updates/changes	–	–	–	–	–	–	–
4 Methodology and policy	0.1	(0.1)	0.2	–	–	0.1	–
5 Acquisitions and disposals	(0.1)	(0.1)	–	–	–	(0.2)	–
6 Other	–	–	–	–	–	–	–
7 As at 31 December 2018	3.2	8.8	1.8	–	2.8	16.8	1.3

Total RWA movement

Internal Model Approach RWAs increased £1.9bn due to an increase in trading activities partially offset by the reduction in Incremental Risk Charge (IRC).

Basis of preparation for movements in risk weighted assets

This analysis splits RWA movement by credit, counterparty credit, market and operational risk. Seven categories of drivers have been identified and are described below. Not all the drivers are applicable to all risk types, however all categories have been listed below for completeness purposes.

Book size

Credit risk and counterparty risk (inc CVA)

This represents RWA movements driven by changes in the size and composition of underlying positions, measured using EAD values for existing portfolios over the period. This includes, but is not exclusive to:

- new business and maturing loans
- changes in product mix and exposure growth for existing portfolios
- book size reductions owing to risk mitigation and write-offs.

Market risk

This represents RWA movements owing to the changes in trading positions and volumes driven by business activity.

Book quality

Credit risk and counterparty risk (inc CVA)

This represents RWA movements driven by changes in the underlying credit quality and recoverability of portfolios and reflected through model calibrations or realignments where applicable. This includes, but is not exclusive to:

- PD migration and LGD changes driven by economic conditions
- ratings migration for standardised exposures

Market risk

This is the movement in RWAs owing to changing risk levels in the trading book, caused by fluctuations in market conditions.

Model updates

Credit risk and counterparty risk (inc CVA)

This is the movement in RWAs as a result of both internal and external model updates. This includes, but is not exclusive to:

- updates to existing model inputs driven by both internal and external review
- model enhancements to improve models performance.

Market risk

This is the movement in RWAs reflecting change in model scope, changes to market data levels, volatilities, correlations, liquidity and ratings used as input for the internal modelled RWA calculations.

Analysis of treasury and capital risk

Methodology and policy

Credit risk and counterparty risk (inc CVA)

This is the movement in RWAs as a result of both internal and external methodology, policy and regulatory changes. This includes, but is not exclusive to:

- updates to RWA calculation methodology, communicated by the regulator
- the implementation of credit risk mitigation to a wider scope of portfolios.

Market risk

This is the movement in RWAs as a result of both internal and external methodology, policy and regulatory changes for market risk.

Acquisitions and disposals

This is the movement in RWAs as a result of the disposal or acquisition of business operations impacting the size of banking and trading portfolios. This includes credit RWA reductions relating to Non-Core.

Foreign exchange movements

This is the movement in RWAs as a result of changes in the exchange rate between the functional currency of the Barclays business area or portfolio and our presentational currency for consolidated reporting. It should be noted that foreign exchange movements shown in table 14 do not include the impact of foreign exchange for the counterparty credit risk or market risk RWAs.

Other

This is the movement in RWAs driven by items that cannot be reasonably assigned to the other driver categories. In relation to market risk RWAs, this includes changes in measurement that are not driven by methodology, policy or model updates. This category had a nil balance for the year ended 31 December 2018.

Leverage ratio and exposures

The following leverage tables show the components of the leverage ratio using the CRR definition for the leverage exposure and Tier 1 capital. This disclosure has been prepared using the format set out in Annex I and Annex II of the final 'Implementing technical standards with regard to disclosure of the leverage ratio for institutions (Commission implementing regulation-EU 2016/200). Barclays is not subject to binding leverage ratio requirements under CRR.

Barclays manages the risk of excessive leverage through the Group's Capital Management process which is outlined in the Annual Report. Leverage Exposure forecasts are regularly monitored against early warning indicators and internal limits which trigger actions to mitigate risk. The Group's leverage exposure is also subject to regular internal and external stress testing.

Table 18: Summary reconciliation of accounting assets and leverage ratio exposures

This table is a summary of the total leverage exposure and comprises of total IFRS assets used for statutory purposes, regulatory consolidation and other leverage adjustments.

	As at 31.12.18			As at 31.12.17
	Barclays Group £bn	Barclays Bank PLC £bn	Barclays Bank UK PLC £bn	Barclays Group £bn
1 Total assets as per published financial statements	1,133	893	251	1,133
2 Adjustment for entities which are consolidated for accounting purposes but are outside the scope of regulatory consolidation	(2)	(1)	–	8
4 Adjustments for derivative financial instruments	(102)	(107)	1	(125)
5 Adjustments for securities financing transactions (SFTs)	17	39	–	19
6 Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	108	115	10	103
EU-6a (Adjustment for intragroup exposures excluded from the leverage ratio exposure measure in accordance with Article 429 (7) of Regulation (EU) No 575/2013)	–	(136)	–	–
7 Other adjustments	(12)	(12)	(4)	(13)
8 Total leverage ratio exposure	1,143	791	258	1,125

Analysis of treasury and capital risk

Table 19: Leverage ratio common disclosure

This table shows the leverage ratio calculation and includes additional breakdowns for the leverage exposure measure.

Barclays Group		As at 31.12.18 £bn	As at 31.12.17 £bn
On-balance sheet exposures (excluding derivatives and SFTs)			
1	On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	746	749
2	Asset amounts deducted in determining tier 1 capital	(12)	(13)
3	Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)	734	736
Derivative exposures			
4	Replacement cost associated with all derivatives transactions (ie net of eligible cash variation margin)	54	54
5	Add-on amounts for PFE associated with all derivatives transactions (mark-to-market method)	123	120
7	Deductions of receivables assets for cash variation margin provided in derivatives transactions	(31)	(33)
8	Exempted CCP leg of client-cleared trade exposures	(2)	(1)
9	Adjusted effective notional amount of written credit derivatives	297	278
10	Adjusted effective notional offsets and add-on deductions for written credit derivatives	(278)	(264)
11	Total derivative exposures	163	154
Securities financing transaction exposures			
12	Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	357	336
13	Netted amounts of cash payables and cash receivables of gross SFT assets	(236)	(223)
14	Counterparty credit risk exposure for SFT assets	17	19
16	Total securities financing transaction exposures	138	132
Other off-balance sheet exposures			
17	Off-balance sheet exposures at gross notional amount	338	322
18	Adjustments for conversion to credit equivalent amounts	(230)	(219)
19	Other off-balance sheet exposures	108	103
Capital and total exposures			
20	Tier 1 capital	49.3	50.4
21	Total leverage ratio exposures	1,143	1,125
Leverage ratio			
22	Leverage ratio	4.3%	4.5%

Choice on transitional arrangements and amount of derecognised fiduciary items

EU-23 Choice on transitional arrangements for the definition of the capital measure Fully phased in

The CRR leverage ratio decreased to 4.3% (December 2017: 4.5%) driven by a £1.1bn decrease in fully loaded tier 1 capital to £49.3bn and a £18bn increase in leverage exposure to £1,143bn.

- Total derivative exposures increased £9bn to £163bn primarily within net written credit derivatives, driven by trading activity
- Total SFTs increased £6bn to £138bn primarily driven by the CIB utilising leverage balance sheet more efficiently within high returning financing businesses
- Total off-balance sheet exposures increased £5bn to £108bn primarily driven by increase in new facilities

Analysis of treasury and capital risk

Table 19a: Leverage ratio common disclosure for significant subsidiaries

		As at 31.12.18	
		Barclays Bank PLC £bn	Barclays Bank UK PLC £bn
On-balance sheet exposures (excluding derivatives and SFTs)			
1	On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	485	249
2	Asset amounts deducted in determining tier 1 capital	(12)	(4)
3	Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)	473	245
Derivative exposures			
4	Replacement cost associated with <i>all</i> derivatives transactions (ie net of eligible cash variation margin)	52	–
5	Add-on amounts for PFE associated with all derivatives transactions (mark-to-market method)	112	1
7	Deductions of receivables assets for cash variation margin provided in derivatives transactions	(31)	–
8	Exempted CCP leg of client-cleared trade exposures	(1)	–
9	Adjusted effective notional amount of written credit derivatives	297	–
10	Adjusted effective notional offsets and add-on deductions for written credit derivatives	(278)	–
11	Total derivative exposures	151	1
Securities financing transaction exposures			
12	Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	398	2
13	Netted amounts of cash payables and cash receivables of gross SFT assets	(249)	–
14	Counterparty credit risk exposure for SFT assets	39	–
16	Total securities financing transaction exposures	188	2
Other off-balance sheet exposures			
17	Off-balance sheet exposures at gross notional amount	253	69
18	Adjustments for conversion to credit equivalent amounts	(138)	(59)
19	Other off-balance sheet exposures	115	10
Exempted exposures in accordance with CRR Article 429 (7) and (14) (on and off balance sheet)			
EU-19a	Exemption of intragroup exposures (solo basis) in accordance with Article 429(7) of Regulation (EU) No 575/2013 (on and off balance sheet)	(136)	–
Capital and total exposures			
20	Tier 1 capital	31.9	12.8
21	Total leverage ratio exposures	791	258
Leverage ratio			
22	Leverage ratio	4.0%	4.9%
Choice on transitional arrangements and amount of derecognised fiduciary items			
EU-23	Choice on transitional arrangements for the definition of the capital measure	Transitional	Transitional

Table 20: Split-up of on balance sheet exposures (excluding derivatives, SFTs, and exempted exposures)

The table shows a breakdown of the on-balance sheet exposures excluding derivatives, SFTs and exempted exposures, by asset class.

		As at 31.12.18 £bn	As at 31.12.17 £bn
EU-1	Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which:	746	749
EU-2	Trading book exposures	135	149
EU-3	Banking book exposures, of which:	611	600
EU-4	Covered bonds	–	–
EU-5	Exposures treated as sovereigns	242	237
EU-6	Exposures to regional governments, MDB, international organisations and PSE NOT treated as sovereigns	1	1
EU-7	Institutions	26	24
EU-8	Secured by mortgages of immovable properties	149	149
EU-9	Retail exposures	60	57
EU-10	Corporate	82	80
EU-11	Exposures in default	10	6
EU-12	Other exposures (eg equity, securitisations, and other non-credit obligation assets)	41	46

Further information on the key movements during the period are disclosed on page 32

Analysis of treasury and capital risk

Table 21: LIQ1 - Liquidity Coverage ratio

This table shows the level and components of the Liquidity Coverage Ratio. This disclosure has been prepared in accordance with the requirements set out in the 'Guidelines on LCR disclosure to complement the disclosure of liquidity risk management under Article 435 of Regulation (EU) No 575/2013' as specified in Annexure II which complements Article 435(1)(f) of Regulation (EU) No 575/2013.

Liquidity coverage ratio (period end)						Total period end value				
	31.12.18 £m	30.09.18 £m	30.06.18 £m	31.03.18 £m	31.12.17 £m					
Liquidity buffer	218,766	210,681	207,989	203,591	214,637					
Total net cash outflows	129,172	130,925	134,712	138,436	139,760					
Liquidity coverage ratio (%) (period end)	169%	161%	154%	147%	154%					
LIQ1 – Liquidity coverage ratio (average)										
	Total unweighted value (average)					Total weighted value (average)				
	31.12.18	30.09.18	30.06.18	31.03.18	31.12.17	31.12.18	30.09.18	30.06.18	31.03.18	31.12.17
Number of data points used in calculation of averages	12	12	12	12	12	12	12	12	12	12
High-quality liquid assets	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
1 Total high-quality liquid assets (HQLA)						220,996	218,285	218,475	213,064	203,944
Cash outflows										
2 Retail deposits and deposits from small business customers, of which:	195,442	194,296	192,396	192,581	193,217	17,055	16,981	16,813	16,890	17,232
3 <i>Stable deposits</i>	110,505	109,873	109,219	108,453	102,757	5,525	5,494	5,461	5,423	5,138
4 <i>Less stable deposits</i>	84,928	84,414	83,167	84,117	90,460	11,520	11,478	11,342	11,457	12,094
5 Unsecured wholesale funding, of which:	159,087	156,351	154,975	154,762	154,737	83,736	82,404	81,940	81,741	80,825
6 <i>Operational deposits (all counterparties) and deposits in networks of cooperative banks</i>	30,151	29,692	28,464	28,002	27,177	7,401	7,286	6,982	6,873	6,678
7 <i>Non-operational deposits (all counterparties)</i>	124,155	121,520	121,326	121,952	123,681	71,554	69,979	69,773	70,060	70,268
8 <i>Unsecured debt</i>	4,781	5,139	5,185	4,808	3,879	4,781	5,139	5,185	4,808	3,879
9 Secured wholesale funding						54,615	54,038	53,728	53,834	51,642
10 Additional requirements, of which:	173,931	173,222	174,244	176,455	184,102	52,262	52,349	53,146	53,301	55,124
11 <i>Outflows related to derivative exposures and other collateral requirements</i>	20,406	20,428	20,272	19,537	18,827	19,158	19,427	19,427	18,781	18,112
12 <i>Outflows related to loss of funding on debt products</i>	7,244	7,466	7,662	7,477	7,490	7,244	7,466	7,662	7,477	7,490
13 <i>Credit and liquidity facilities</i>	146,281	145,328	146,310	149,441	157,785	25,860	25,456	26,057	27,043	29,522
14 <i>Other contractual funding obligations</i>	18,852	18,460	11,969	11,482	11,821	1,101	975	832	929	917
15 <i>Other contingent funding obligations</i>	149,586	149,597	149,707	149,941	152,396	3,677	3,823	3,769	3,821	4,351
16 Total cash outflows						212,446	210,570	210,228	210,516	210,091
Cash inflows										
17 Secured lending (e.g. reverse repos)	370,406	363,490	351,784	342,735	326,599	53,592	52,639	51,364	51,309	49,853
18 Inflows from fully performing exposures	12,488	12,070	11,757	12,600	13,920	8,536	8,671	8,848	9,893	11,400
19 Other cash inflows ^a	10,232	9,471	9,313	9,207	9,674	5,586	4,916	4,619	4,591	5,305
20 Total cash inflows	393,126	385,031	372,854	364,542	350,193	67,714	66,226	64,831	65,793	66,558
<i>Fully exempt inflows</i>	–	–	–	–	–	–	–	–	–	–
<i>Inflows subject to 90% cap</i>	–	–	–	–	–	–	–	–	–	–
<i>Inflows subject to 75% cap</i>	308,378	298,997	287,092	280,990	272,374	67,714	66,226	64,831	65,793	66,558
21 Liquidity buffer						220,996	218,285	218,475	213,064	203,944
22 Total net cash outflows						144,732	144,344	145,397	144,723	143,533
23 Liquidity coverage ratio (%) (average)						153%	151%	150%	147%	142%

Note

a Difference between total weighted inflows and total weighted outflows arising from transactions in third countries where there are transfer restrictions or which are denominated in non-convertible currencies

Analysis of treasury and capital risk

As at 31 December 2018, the Barclays Group LCR was 169% (December 2017: 154%), equivalent to a surplus of £90bn (December 2017: £75bn) to 100% regulatory requirement, as shown on Table 7. The average LCR for the 12 months to 31 December 2018 increased to 153%, as growth in the liquidity buffer exceeded growth in stresses. Growth in the average liquidity buffer during the 12 month period is largely driven by net deposit growth across businesses. The strong liquidity position reflects the Group's prudent approach given the continued macroeconomic uncertainty. The Barclays Group also continued to maintain surpluses to its internal liquidity requirements.

The composition of the liquidity pool is subject to limits set by the Barclays PLC Board and the independent liquidity risk, credit risk, and market risk functions. In addition, the investment of the liquidity pool is monitored for concentration risk by issuer, currency and asset type. Given the incremental returns generated by these highly liquid assets, the risk and reward profile is continuously managed.

As at 31 December 2018, 90% (December 2017: 93%) of the liquidity pool was located in Barclays Bank PLC and Barclays Bank UK PLC. The residual portion of the liquidity pool is held outside of these entities, predominantly in the US subsidiaries, to meet entity specific stress outflows and regulatory requirements. To the extent the use of this portion of the liquidity pool is restricted due to regulatory requirements, it is assumed to be unavailable to the rest of the Group in calculating the LCR.

The strong deposit franchises in Barclays Bank Group and Barclays Bank UK Group are primary funding sources for Barclays Group. Issuances to meet Minimum Requirements for Own Funds and Eligible Liabilities (MREL) from Barclays PLC also provide a long term stable source of funding for the Barclays Group.

Barclays Bank Group and Barclays Bank UK Group maintain access to a variety of sources of wholesale funding in major currencies, including those available from term investors across a range of distribution channels and geographies, short-term funding markets and repo markets. In addition, Barclays Bank Group has direct access to US, European and Asian capital markets through its global investment banking operations and to long-term investors through its clients worldwide. As a result, wholesale funding is well diversified by product, maturity, geography and currency across the Barclays Group.

Key sources of wholesale funding for Barclays Bank Group include money markets, certificates of deposit, commercial paper, medium-term issuances (including structured notes) and securitisations. Key sources of wholesale funding for Barclays Bank UK Group include money markets, certificates of deposit, commercial paper, covered bonds and other securitisations. Barclays Bank Group and Barclays Bank UK Group also support various central bank monetary initiatives including participation in the Bank of England's Term Funding Scheme.

Analysis of treasury and capital risk

Foreign exchange risk

The Group is exposed to two sources of foreign exchange risk.

a) Transactional foreign currency exposure

Transactional foreign currency exposures represent exposure on banking assets and liabilities, denominated in currencies other than the functional currency of the transacting entity.

The Group's risk management policies prevent the holding of significant open positions in foreign currencies outside the trading portfolio managed by Barclays International which is monitored through VaR.

Banking book transactional foreign exchange risk outside of Barclays International is monitored on a daily basis by the market risk function and minimised by the businesses.

b) Translational foreign exchange exposure

The Group's investments in overseas subsidiaries and branches create capital resources denominated in foreign currencies, principally USD and EUR. Changes in the GBP value of the net investments due to foreign currency movements are captured in the currency translation reserve, resulting in a movement in CET1 capital.

The Group's strategy is to minimise the volatility of the capital ratios caused by foreign exchange movements, by matching the CET1 capital movements to the revaluation of the Group's foreign currency RWA exposures.

Table 22: Functional currency of operations

	Foreign currency net investments £m	Borrowings which hedge the net investments £m	Derivatives which hedge the net investments £m	Structural currency exposures pre-economic hedges £m	Economic hedges £m	Remaining structural currency exposures £m
As at 31 December 2018						
USD	28,857	(12,322)	(2,931)	13,604	(4,827)	8,777
EUR	2,672	(3)	–	2,669	(2,146)	523
JPY	489	–	–	489	–	489
Other	2,026	–	(37)	1,989	–	1,989
Total	34,044	(12,325)	(2,968)	18,751	(6,973)	11,778
As at 31 December 2017						
USD	27,848	(12,404)	(540)	14,904	(6,153)	8,751
EUR	2,489	(3)	–	2,486	(2,127)	359
JPY	467	(152)	(301)	14	–	14
Other	2,483	–	(1,299)	1,184	–	1,184
Total	33,287	(12,559)	(2,140)	18,588	(8,280)	10,308

The economic hedges primarily represent the USD and EUR preference shares and Additional Tier 1 (AT1) instruments that are held as equity. These are accounted for at historic cost under IFRS and do not qualify as hedges for accounting purposes.

During 2018, total structural currency exposure net of hedging instruments increased by £1.5bn to £11.8bn (2017: £10.3bn). Foreign currency net investments increased by £0.8bn to £34.0bn (2017: £33.3bn) driven predominantly by a £1bn increase in US Dollars and a £0.2bn increase in Euro offset by a £0.5bn decrease in other currencies. The hedges associated with these investments increased by £0.6bn to £15.3bn (2017: £14.7bn).

Analysis of treasury and capital risk

Pension risk review

The UK Retirement Fund (UKRF) represents approximately 97% (2017: 96%) of Barclays Group's total retirement benefit obligations globally. As such this risk review section focuses exclusively on the UKRF. The UKRF is closed to new entrants and there is no new final salary benefit being accrued. Existing active members accrue a combination of a cash balance benefit and a defined contribution element. Pension risk arises as the market value of the pension fund assets may decline, investment returns may reduce or the estimated value of the pension liabilities may increase.

Refer to page 179 of this report for more information on how pension risk is managed.

Assets

The Trustee Board of the UKRF defines its overall long-term investment strategy with investments across a broad range of asset classes. This results in an appropriate mix of return seeking assets as well as liability matching assets to better match future pension obligations. The main market risks within the asset portfolio are interest rates and equities. The split of scheme assets is shown within Note 33 on page 331 of the Barclays PLC Annual Report 2018. The fair value of the UKRF assets was £29.0bn as at 31 December 2018 (2017: £30.1bn).

Liabilities

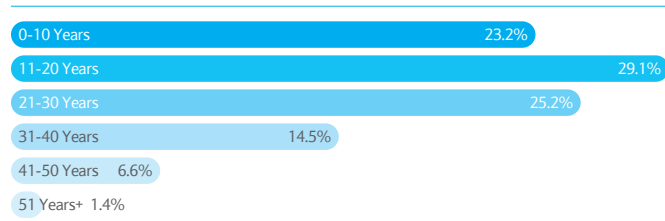
The UKRF retirement benefit obligations are a series of future cash flows with relatively long duration. On an IAS 19 basis these cash flows are sensitive to changes in the expected long-term price inflation rate (RPI) and the discount rate (AA corporate bond yield):

- an increase in long-term expected inflation corresponds to an increase in liabilities;
- a decrease in the discount rate corresponds to an increase in liabilities.

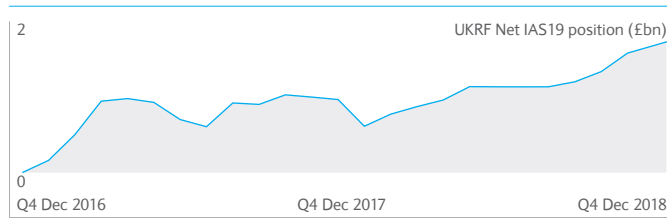
Pension risk is generated through Barclays Group's defined benefit schemes and this risk is set to reduce over time as the main defined benefit scheme is closed to new entrants. The chart below outlines the shape of the UKRF's liability cash flow profile as at 31 December 2018 that takes account of the future inflation indexing of payments to beneficiaries. The majority of the cash flows (approximately 92%) fall between 0 and 40 years, peaking between 11 and 20 years and reducing thereafter. The shape may vary depending on changes to inflation and longevity expectations and any members who elect to transfer out. Transfers out will bring forward the liability cash flows.

For more detail on the UKRF's financial and demographic assumptions refer to Note 33 on page 331 of the Barclays PLC Annual Report 2018.

Proportion of liability cash flows



IAS 19 pension position in 2018 (£bn)



The graph above shows the UKRF's net IAS 19 pension position at each month-end for the past two years. During 2017 and 2018 the net improvement in the IAS 19 position was largely driven by bank contributions and credit spreads widening. Changes from other market levels, in particular equity prices and interest rates, were offset by updates to demographic assumptions.

Please refer to Note 33 on page 331 of the Barclays PLC Annual Report 2018 for the sensitivity of the UKRF to changes in key assumptions.

Risk measurement

In line with Barclays' risk management framework the assets and liabilities of the UKRF are modelled within a VaR framework to show the volatility of the pension position at a total portfolio level. This enables the risks, diversification and liability matching characteristics of the UKRF obligations and investments to be adequately captured. VaR is measured and monitored on a monthly basis. Risks are reviewed and reported regularly at forums including the Barclays Group Board Risk Committee, the Group Risk Committee, the Pensions Management Group and the Pension Executive Board. The VaR model takes into account the valuation of the liabilities on an IAS 19 basis (refer to Note 33 of the Barclays PLC Annual Report 2018). The Trustee receives quarterly VaR measures on a funding basis.

The pension liability is also sensitive to post-retirement mortality assumptions which are reviewed regularly. Refer to Note 33 on page 331 of the Barclays PLC Annual Report 2018 for more details.

In addition, the impact of pension risk to Barclays Group is taken into account as part of the stress testing process. Stress testing is performed internally on at least an annual basis. The UKRF exposure is also included as part of regulatory stress tests.

Barclays Group defined benefit pension schemes affects capital in two ways:

- An IAS 19 deficit is treated as a liability on Barclays Group's balance sheet. Movement in a deficit due to remeasurements, including actuarial losses, are recognised immediately through Other Comprehensive Income and as such reduces shareholders' equity and CET1 capital. An IAS 19 surplus is treated as an asset on the balance sheet and increases shareholders' equity; however, it is deducted for the purposes of determining CET1 capital.
- In Barclays Group's statutory balance sheet an IAS 19 surplus or deficit is partially offset by a deferred tax liability or asset respectively. These may or may not be recognised for calculating CET1 capital depending on the overall deferred tax position of Barclays Group at the particular time.

Pension risk is taken into account in the Pillar 2A capital assessment undertaken by the PRA at least annually. The Pillar 2A requirement forms part of Barclays Group's overall regulatory minimum requirement for CET1 capital, Tier 1 capital and total capital. More detail on minimum regulatory requirements can be found on pages 178-179 of this report.

Analysis of treasury and capital risk

Interest rate risk in the banking book

Net interest income sensitivity

The table below shows a sensitivity analysis on pre-tax net interest income for non-trading financial assets and financial liabilities, including the effect of any hedging. The sensitivity has been measured using the Annual Earnings at Risk (AEaR) methodology as described on page 180. Note that this metric assumes an instantaneous parallel change to interest rate forward curves. The model floors shocked market rates at zero; changes in Net Interest Income (NII) sensitivity are only observed where forward rates are greater than zero. The main model assumptions are: (i) one year time horizon; (ii) balance sheet is held constant; (iii) balances are adjusted for assumed behavioural profiles (i.e. considers that customers may remortgage before the contractual maturity); and (iv) behavioural assumptions are kept unchanged in all rate scenarios.

Table 23: Net interest income sensitivity (AEaR) by business unit^{a,b,c}

	Barclays UK £m	Barclays International £m	Total £m
As at 31 December 2018			
+100bps	124	89	213
+25bps	30	23	53
-25bps	(73)	(35)	(108)
As at 31 December 2017			
+100bps	45	31	76
+25bps	11	9	20
-25bps	(61)	(22)	(83)

Notes

a Excludes investment banking business.

b Excludes Treasury operations, which are driven by the firm's investments in the liquidity pool, which are risk managed using value-based risk measures described on page 39 of this report. Treasury's NII (AEaR) sensitivity to a +25/-25bps move is +£23m / -£29m respectively.

c Expected fixed rate mortgage pipeline completions in Barclays UK assumed to be consistent with level and timing of pipeline hedging.

NII asymmetry arises due to the current low level of interest rates. Modelled NII sensitivity to a -25bp shock to rates has increased year on year as a result of maturity of hedging which provided an offset to the exposure to falling interest rates. Modelled NII sensitivity to +25bp and +100bp shocks to rates also increased as a result.

Table 24: Net interest income sensitivity (AEaR) by currency^a

	2018		2017	
	+25 basis points £m	-25 basis points £m	+25 basis points £m	-25 basis points £m
As at 31 December				
GBP	43	(99)	12	(76)
USD	1	(1)	1	(1)
EUR	6	(3)	4	(1)
Other currencies	3	(5)	3	(5)
Total	53	(108)	20	(83)
As percentage of net interest income	0.58%	(1.19%)	0.20%	(0.84%)

Note

a Barclays UK and Barclays International sensitivity (excluding Investment Banking business and Treasury).

Analysis of equity sensitivity

Equity sensitivity table measures the overall impact of a +/- 25bps movement in interest rates on retained earnings, fair value through other comprehensive income (FVOCI) and cash flow hedge reserves. This data is captured using DV01 metric which is an indicator of the shift in value for a 1 basis point in the yield curve.

Table 25: Analysis of equity sensitivity

	2018		2017	
	+25 basis points £m	-25 basis points £m	+25 basis points £m	-25 basis points £m
As at 31 December				
Net interest income	53	(108)	20	(83)
Taxation effects on the above	(13)	27	(6)	25
Effect on profit for the year	40	(81)	14	(58)
As percentage of net profit after tax	1.69%	(3.41%)	(1.57%)	6.52%
Effect on profit for the year (per above)	40	(81)	14	(58)
Fair value through other comprehensive income	(143)	256	(164)	219
Cash flow hedge reserve	(574)	544	(616)	598
Taxation effects on the above	179	(200)	195	(204)
Effect on equity	(498)	519	(571)	555
As percentage of equity	(0.78%)	0.81%	(0.87%)	0.84%

As discussed in relation to the net interest income sensitivity table above, the increase in impact of a 25bps movement in rates is a result of maturity of hedging.

Movements in the FVOCI reserve would impact CET1 capital, however the movement in the cash flow hedge reserve would not impact CET1 capital.

Analysis of treasury and capital risk

Volatility of the FVOCI portfolio in the liquidity pool

Changes in value of FVOCI exposures flow directly through capital via the FVOCI reserve. The volatility of the value of the FVOCI investments in the liquidity pool is captured and managed through a value measure rather than an earning measure, i.e. the non-traded market risk VaR.

Although the underlying methodology to calculate the non-traded VaR is identical to the one used in traded management VaR, the two measures are not directly comparable. The non-traded VaR represents the volatility to capital driven by the FVOCI exposures. These exposures are in the banking book and do not meet the criteria for trading book treatment.

Non-traded value at risk (£m)



Analysis of volatility of the FVOCI portfolio in the liquidity pool

For the year ended 31 December	2018			2017		
	Average £m	High £m	Low £m	Average £m	High £m	Low £m
Non-traded market value at risk (daily, 95%)	45	61	32	36	50	27

The volatility in the FVOCI portfolio was primarily driven by changes in interest rate risk exposure taken in the liquid asset buffer.

Analysis of treasury and capital risk

Table 26: PV1 - Prudent valuation adjustment

This table below provides a granular breakdown of the Prudent Valuation Adjustment (PVA) reported by Barclays. PVA is a Common Equity Tier 1 capital deduction.

EU CRR Articles 34 & 105 define regulatory principles that are applied to all fair valued assets and liabilities in order to determine a prudent valuation. The Prudent Valuation Adjustment (PVA) is the difference between the financial statement fair valuation and the prudent valuation.

	Equity £m	Interest rates £m	FX £m	Credit £m	Commodities £m	Total £m	Of which in the trading book ^{a,b} £m	Of which in the banking book ^a £m	
As at 31 December 2018									
1	Closeout uncertainty ^d , of which:	543	271	22	332	–	1,168	1,142	27
2	Mid-market value	342	159	15	198	–	713	687	26
3	Closeout cost ^c	15	78	2	21	–	116	115	1
4	Concentration	187	34	5	113	–	339	339	–
5	Early termination	–	–	–	–	–	–	–	–
6	Model risk ^c	31	14	–	8	–	54	54	–
7	Operational risk	36	39	2	41	–	117	97	20
8	Investing and funding costs	–	71	–	194	–	265	86	179
9	Unearned credit spreads ^c	–	88	–	–	–	88	88	–
10	Future administrative costs	8	28	2	16	–	54	54	–
11	Other	–	–	–	–	–	–	–	–
12	Total adjustment	618	511	26	591	–	1,746	1,521	225
As at 31 December 2017									
1	Closeout uncertainty ^d , of which:	355	210	35	286	–	886	826	60
2	Mid-market value	233	126	20	159	–	539	480	59
3	Closeout cost ^c	13	54	3	20	–	90	89	1
4	Concentration	109	30	12	107	–	258	258	–
5	Early termination	–	–	–	–	–	–	–	–
6	Model risk ^c	30	15	1	7	–	53	53	–
7	Operational risk	–	–	–	–	–	–	–	–
8	Investing and funding costs	–	69	–	235	–	304	90	214
9	Unearned credit spreads ^c	–	88	–	–	–	88	88	–
10	Future administrative costs	8	22	8	16	–	54	54	–
11	Other	–	–	–	–	–	–	–	–
12	Total adjustment	393	404	44	544	–	1,385	1,111	274

Notes

- a Barclays' implementation of PVA means that amounts cannot be easily classified as banking book or trading book. As such, an assumption has been made that the most material contributor to banking book PVA is a portfolio of longer dated non-asset backed loans made to Education, Social Housing and Local Authority (ESHLA) counterparties. The ESHLA PVA numbers are presented in the "Credit" column of the table.
- b Significant contributors to PVA include trading book derivative portfolios, equity investments and non-asset backed loans held at fair value
- c Unearned credit spread uncertainty was previously disclosed in closeout uncertainty and model risk. For 2018 it has been disclosed separately and comparatives updated.
- d A diversification reduction factor of 50% is applied to uncertainty after all regulatory exclusions and offsets, where permitted by EU CRR.

PVA has increased from £1.4bn to £1.7bn in 2018 driven by:

- Mid-market value – mid market value increased by £0.2bn primarily by wider uncertainty spreads. This was skewed toward the 4th quarter as market conditions deteriorated.
- Operational Risk AVA – this increased from zero to £0.1bn. As per the PVA regulatory technical standard, AMA attracts a zero Operational Risk AVA. As we moved from the advanced to standardized operational risk approach, we were required to take an operational risk AVA charge (the change happened at the end of Q1 2018).

Analysis of credit risk

This section details Barclays' credit risk profile, focusing on regulatory measures such as exposure at default and risk weighted assets. The risk profile is analysed by business segment, country and industry concentrations, residual maturities, probabilities of default and actual losses.

Key Metrics

Risk weighted assets for credit risk increased in the year

Total RWA

£5.7bn

Driven by:

£6.8bn

Business growth within Barclays International and Barclays UK

£3.1bn

Foreign exchange movement due to the appreciation of period end USD against GBP

-£2.9bn

Improvements in the asset quality within Barclays International

-£2.8bn

Regulatory deconsolidation of BAGL

Risk and capital position review

Analysis of credit risk

Analysis of capital requirements and exposures for credit risk

Table 27: Credit risk exposures – Note on pre- and post- credit risk mitigation (CRM) EAD

This table summarises credit risk information presented in the rest of this report and shows exposure at default pre- and post-CRM. In accordance with regulatory requirements, credit mitigation is either reflected in regulatory measures for exposure at default (EAD), or in the risk inputs: probability of default (PD) and loss given default (LGD). For the majority of Barclays' exposures, in particular mortgages and those under the AIRB treatment, the impact of CRM is primarily reflected in the PD or LGD rather than EAD measures.

RWAs and post-CRM exposures are analysed by business on pages 45 to 49. Pre-CRM exposures are further analysed by geography on page 50, industry on page 54 and residual maturity on page 58. Information on the impact of CRM on EAD is set out on pages 65 - 66

Credit exposure class	EAD pre-CRM ^a		EAD post-CRM ^a	
	Year end £m	Average ^b £m	Year end £m	Average ^b £m
As at 31 December 2018				
Standardised approach				
Central governments or central banks	203,292	197,246	203,292	197,246
Regional governments or local authorities	845	726	606	534
Public sector entities	5,688	2,978	5,686	2,965
Multilateral development banks	4,091	3,861	4,091	3,861
International organisations	920	807	920	807
Institutions	4,162	4,622	4,134	4,590
Corporates	40,369	37,502	26,984	25,020
Retail	30,753	28,162	30,060	27,467
Secured by mortgages	8,875	9,939	8,875	9,939
Exposures in default	2,584	2,422	2,530	2,378
Items associated with high risk	3,160	2,724	3,160	2,642
Covered bonds	122	91	122	91
Securitisation positions	–	–	–	–
Collective investment undertakings	–	–	–	–
Equity positions	–	13	–	13
Other items	2,699	4,019	2,699	4,019
Total Standardised Approach Credit Risk Exposure	307,560	295,112	293,159	281,571
Advanced IRB approach				
Central governments or central banks	74,298	70,873	74,131	70,705
Institutions	26,529	25,029	26,462	24,962
Corporates	112,230	118,577	105,649	111,996
Retail	–	–	–	–
– Small and medium-sized enterprises (SMEs)	8,898	8,952	8,898	8,952
– Secured by real estate collateral	148,396	148,537	148,396	148,537
– Qualifying revolving retail	41,922	42,253	41,922	42,253
– Other retail	6,296	6,531	6,296	6,531
Equity	–	–	–	–
Securitisation positions	34,924	31,023	34,923	31,023
Non-credit obligation assets	8,996	9,181	8,996	9,181
Total advanced IRB credit risk exposure	462,489	460,956	455,673	453,959
Total credit exposure	770,051	756,068	748,832	735,712

Notes

a Collateral and guarantees for advanced IRB are not included within EAD as these are incorporated in loss given default (LGD) calculations.

b Averages are calculated from the past four quarters.

Risk and capital position review

Analysis of credit risk

Table 27: Credit risk exposures – Note on pre- and post- credit risk mitigation (CRM) EAD continued

As at 31 December 2017	EAD pre-CRM		EAD post-CRM	
	Year end £m	Average £m	Year end £m	Average £m
Standardised approach				
Central governments or central banks	170,016	156,468	170,016	156,357
Regional governments or local authorities	594	791	580	786
Public sector entities	347	339	347	332
Multilateral development banks	3,863	4,805	3,863	4,805
International organisations	981	1,235	981	1,235
Institutions	4,523	5,278	4,472	5,247
Corporates	35,032	37,042	23,796	25,969
Retail	28,776	28,618	28,130	27,947
Secured by mortgages	8,905	10,078	8,905	10,078
Exposures in default	2,320	2,260	2,296	2,229
Items associated with high risk	1,741	1,868	1,627	1,752
Covered bonds	–	104	–	104
Securitisation positions	–	–	–	–
Collective investment undertakings	–	1	–	1
Equity positions	38	150	38	150
Other items	4,282	3,880	4,282	3,880
Total Standardised Approach Credit Risk Exposure	261,418	252,917	249,333	240,872
Advanced IRB approach				
Central governments or central banks	89,242	79,758	89,096	79,613
Institutions	24,172	23,150	23,535	22,512
Corporates	117,737	138,791	111,184	132,239
Retail	–	–	–	–
– Small and medium-sized enterprises (SMEs)	9,221	8,932	9,221	8,932
– Secured by real estate collateral	148,764	150,317	148,764	150,317
– Qualifying revolving retail	43,956	44,733	43,956	44,733
– Other retail	6,948	8,121	6,948	8,121
Equity	–	–	–	–
Securitisation positions	29,926	25,799	29,926	25,799
Non-credit obligation assets	9,062	10,398	9,062	10,398
Total advanced IRB credit risk exposure	479,028	489,999	471,692	482,664
Total credit exposure	740,446	742,916	721,025	723,536

The key movements by business are shown in Table 29 while further details are provided on Table 31 to 54.

Exposure at default pre-CRM increased £29.6bn to £770.1bn, primarily driven by a £18.3bn increase in the central governments or central banks exposure as the Group strengthened its liquidity position.

Risk and capital position review

Analysis of credit risk

Table 28: CRB-B Total and average net amount of exposures

This table provides the total and the average amount of net exposures over the period by exposure class.

The "Net value of exposure" column represents gross exposures pre-CRM and CCF.

	Net value of exposures as at 31 December 2018 £m	Average net exposures as at the 31 December 2018 £m	Net value of exposures as at 31 December 2017 £m	Average net exposures as at the 31 December 2017 £m
1 Central governments or central banks	74,339	71,148	89,273	80,271
2 Institutions	29,970	28,523	27,301	24,781
3 Corporates	164,665	172,527	171,450	201,382
4 Of Which: Specialised Lending	7,684	7,280	6,799	9,558
5 Of Which: SMEs	17,856	18,697	20,648	22,055
6 Retail	236,599	236,834	237,808	242,330
7 Secured by real estate property	150,172	150,656	151,112	153,138
8 SME	–	–	–	–
9 Non-SMEs	150,172	150,656	151,112	153,138
10 Qualifying Revolving	72,741	72,212	71,998	72,962
11 Other Retail	13,686	13,966	14,697	16,252
12 SME	7,388	7,436	7,767	8,172
13 Non-SMEs	6,298	6,530	6,930	8,080
14 Equity	–	–	–	–
15 Total IRB Approach	505,573	509,032	525,832	548,764
16 Central governments or central banks	197,935	192,895	166,932	155,163
17 Regional governments or local authorities	950	837	666	854
18 Public sector entities	5,897	3,083	389	364
19 Multilateral development banks	4,091	3,861	3,863	4,805
20 International organisations	920	807	981	1,235
21 Institutions	5,045	5,307	5,096	5,746
22 Corporates	60,592	56,384	52,565	54,462
23 Of Which: SMEs	5,727	5,577	5,666	6,679
24 Retail	107,025	102,565	105,240	105,244
25 Of Which: SMEs	3,746	3,677	3,421	3,345
26 Secured by mortgages on immovable property	8,892	9,962	8,924	10,094
27 Of Which: SMEs	271	110	492	436
28 Exposures in default	2,779	2,530	2,359	2,382
29 Items associated with particularly high risk	3,173	2,739	1,762	1,939
30 Covered bonds	122	91	–	104
31 Claims on institutions and corporates with a short-term credit assessment	–	–	–	–
32 Collective investments undertakings	–	–	–	1
33 Equity exposures	–	13	38	150
34 Other exposures	2,699	4,019	4,282	3,880
35 Total standardised approach	400,120	385,093	353,097	346,423
36 Total	905,693	894,125	878,929	895,186

This table includes exposures subject to the IRB and Standardised approach only. For details of key movements in these exposure classes please see Table 27.

Risk and capital position review

Analysis of credit risk

Credit risk exposures

The following tables analyse credit risk exposures and risk weighted assets.

Table 29: Detailed view of exposure at default, post-CRM by business

This table shows exposure at default post-CRM by business and credit exposure class for credit risk.

EAD post-CRM credit exposure class				
As at 31 December 2018	Barclays UK £m	Barclays International £m	Head Office £m	Total £m
Credit risk				
Standardised approach				
Central governments or central banks	81,798	118,671	2,823	203,292
Regional governments or local authorities	105	501	–	606
Public sector entities	618	5,068	–	5,686
Multilateral development banks	489	3,602	–	4,091
International organisations	103	817	–	920
Institutions	363	3,736	35	4,134
Corporates	390	26,548	46	26,984
Retail	1,312	28,746	2	30,060
Secured by mortgages	2,648	6,227	–	8,875
Exposures in default	276	2,186	68	2,530
Items associated with high risk	8	1,113	2,039	3,160
Covered bonds	88	34	–	122
Securitisation positions	–	–	–	–
Collective investment undertakings	–	–	–	–
Equity positions	–	–	–	–
Other items	1,564	1,051	84	2,699
Total Standardised approach credit risk exposure	89,762	198,300	5,097	293,159
Advanced IRB approach				
Central governments or central banks	125	74,006	–	74,131
Institutions	6,914	19,532	16	26,462
Corporates	18,472	87,004	172	105,648
Retail	193,128	3,969	8,415	205,512
– Small and medium-sized enterprises (SMEs)	8,898	–	–	8,898
– Secured by real estate collateral	139,981	–	8,415	148,396
– Qualifying revolving retail	37,978	3,944	–	41,922
– Other retail	6,271	25	–	6,296
Equity	–	–	–	–
Securitisation positions	1,494	33,430	–	34,924
Non-credit obligation assets	1,697	4,167	3,132	8,996
Total Advanced IRB credit risk exposure	221,830	222,108	11,735	455,673
Total credit risk exposure	311,592	420,408	16,832	748,832

Risk and capital position review

Analysis of credit risk

Table 29: Detailed view of exposure at default, post-CRM by business continued

As at 31 December 2017	Barclays UK £m	Barclays International £m	Head Office £m	Total £m
Credit risk				
Standardised approach				
Central governments or central banks	22,810	119,322	27,884	170,016
Regional governments or local authorities	95	484	–	579
Public sector entities	–	330	17	347
Multilateral development banks	666	3,197	–	3,863
International organisations	172	809	–	981
Institutions	586	3,724	162	4,472
Corporates	403	22,737	656	23,796
Retail	1,461	26,228	441	28,130
Secured by mortgages	2,890	5,939	77	8,906
Exposures in default	493	1,647	156	2,296
Items associated with high risk	67	742	818	1,627
Covered bonds	–	–	–	–
Securitisation positions	–	–	–	–
Collective investment undertakings	–	–	–	–
Equity positions	–	–	38	38
Other items	1,765	2,367	150	4,282
Total Standardised approach credit risk exposure	31,408	187,526	30,399	249,333
Advanced IRB approach				
Central governments or central banks	15,066	73,378	652	89,096
Institutions	8,173	15,168	194	23,535
Corporates	18,541	88,766	3,877	111,184
Retail	–	–	–	–
– Small and medium-sized enterprises (SMEs)	8,931	75	215	9,221
– Secured by real estate collateral	137,186	–	11,577	148,763
– Qualifying revolving retail	39,572	3,857	527	43,956
– Other retail	6,168	–	781	6,949
Equity	–	–	–	–
Securitisation positions	1,676	28,227	23	29,926
Non-credit obligation assets	1,377	5,248	2,437	9,062
Total Advanced IRB credit risk exposure	236,690	214,719	20,283	471,692
Total credit risk exposure	268,098	402,245	50,682	721,025

Exposure at default post-CRM increased by £27.8bn to £748.8bn. The key movements by business were as follows:

- Barclays UK increased by £43.5bn to £311.6bn, primarily driven by reallocation of the Group liquidity pool post ring-fencing
- Barclays International increased by £18.2bn to £420.4bn, primarily driven by increase in lending activity within the Investment Banking and Consumer, Cards & Payments businesses and appreciation of period end USD against GBP
- Head Office decreased by £33.9bn to £16.8bn, primarily driven by the reallocation of liquidity pool post ring-fencing and the regulatory deconsolidation of BAGL

Risk and capital position review

Analysis of credit risk

Table 30: Detailed view of credit risk RWAs and Capital Requirement

This table shows RWAs for credit risk by credit exposure class for credit risk in the banking book.

Risk weighted assets credit exposure class	Barclays UK £m	Barclays International £m	Head Office £m	Total £m	Capital requirements £m
As at 31 December 2018					
Credit risk					
Standardised approach					
Central governments or central banks	–	155	24	179	14
Regional governments or local authorities	–	15	–	15	1
Public sector entities	4	59	–	63	5
Multilateral development banks	–	–	–	–	–
International organisations	–	–	–	–	–
Institutions	73	1,278	6	1,357	109
Corporates	385	25,268	46	25,699	2,056
Retail	984	21,560	1	22,545	1,804
Secured by mortgages	1,069	2,488	–	3,557	285
Exposures in default	296	2,665	86	3,047	244
Items associated with high risks	11	1,836	4,170	6,017	481
Covered bonds	18	9	–	27	2
Securitisation positions	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–
Equity positions	–	–	–	–	–
Other items	445	258	6	709	56
Total standardised approach credit risk exposure	3,285	55,591	4,339	63,215	5,057
Advanced IRB approach					
Central governments or central banks	20	2,662	–	2,682	215
Institutions	2,399	4,837	23	7,259	581
Corporates	8,334	45,740	119	54,193	4,335
Retail					
– Small and medium-sized enterprises (SMEs)	3,931	–	–	3,931	314
– Secured by real estate collateral	17,696	–	2,509	20,205	1,617
– Qualifying revolving retail	18,347	1,520	–	19,867	1,589
– Other retail	6,172	18	–	6,190	495
Equity	–	–	–	–	–
Securitisation positions	155	4,532	–	4,687	375
Non-credit obligation assets	2,680	7,646	3,126	13,452	1,076
Total advanced IRB credit risk exposure	59,734	66,955	5,777	132,466	10,597
Total credit risk weighted assets	63,019	122,546	10,116	195,681	15,654

Risk and capital position review

Analysis of credit risk

Table 30: Detailed view of credit risk RWAs and Capital Requirement continued

Risk weighted assets credit exposure class	Barclays UK £m	Barclays International £m	Head Office £m	Total £m	Capital requirements £m
As at 31 December 2017					
Credit risk					
Standardised approach					
Central governments or central banks	–	3	405	408	32
Regional governments or local authorities	–	9	–	9	1
Public sector entities	–	88	17	105	8
Multilateral development banks	–	–	–	–	–
International organisations	–	–	–	–	–
Institutions	112	1,452	38	1,602	128
Corporates	410	21,606	559	22,575	1,806
Retail	1,095	19,765	226	21,086	1,687
Secured by mortgages	1,140	2,527	45	3,712	297
Exposures in default	627	1,946	200	2,773	222
Items associated with high risk	101	1,178	1,274	2,553	204
Covered bonds	–	–	–	–	–
Securitisation positions	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–
Equity positions	–	–	94	94	8
Other items	326	484	49	859	69
Total standardised approach credit risk exposure	3,811	49,058	2,907	55,776	4,462
Advanced IRB approach					
Central governments or central banks	567	2,909	87	3,563	285
Institutions	2,612	4,186	100	6,898	552
Corporates	5,387	48,057	2,168	55,612	4,449
Retail					
– Small and medium-sized enterprises (SMEs)	3,729	29	123	3,881	310
– Secured by real estate collateral	16,327	–	3,706	20,033	1,603
– Qualifying revolving retail	18,190	1,528	291	20,009	1,601
– Other retail	6,121	–	518	6,639	531
Equity	–	–	–	–	–
Securitisation positions	171	3,893	4	4,068	325
Non-credit obligation assets	1,851	8,918	2,769	13,538	1,083
Total advanced IRB credit risk exposure	54,955	69,520	9,766	134,241	10,739
Total credit risk weighted assets	58,766	118,578	12,673	190,017	15,201

Risk weighted assets increased by £5.7bn to £195.7bn. The key movements by business were as follows:

- Barclays UK's RWAs increased £4.3bn to £63.0bn primarily due to regulatory methodology changes for the ESHLA portfolio and increase in mortgage lending
- Barclays International's RWAs increased £4.0bn to £122.5bn primarily due to increased lending activity in the Investment Banking, Consumer, Cards and Payments businesses and appreciation of period end USD against GBP
- Head Office's RWAs decreased £2.6bn to £10.1bn primarily driven by the regulatory deconsolidation of BAGL

Risk and capital position review

Analysis of credit risk

Table 30a: Detailed view of credit risk RWAs and Capital Requirement by significant subsidiaries

As at 31 December 2018	Barclays Bank PLC		Barclays Bank UK PLC	
	RWA £m	Capital requirements £m	RWA £m	Capital requirements £m
Standardised approach				
Central governments or central banks	174	14	–	–
Regional governments or local authorities	15	1	–	–
Public sector entities	59	5	4	–
Multilateral development banks	–	–	–	–
International organisations	–	–	–	–
Institutions	6,018	481	125	10
Corporates	24,219	1,938	460	37
Retail	816	65	1,079	86
Secured by mortgages	2,241	179	1,009	81
Exposures in default	2,060	165	304	24
Items associated with high risks	9,593	767	541	43
Covered bonds	7	1	18	1
Securitisation positions	–	–	–	–
Collective investment undertakings	–	–	–	–
Equity positions	582	47	–	–
Other items	53	4	445	36
Total standardised approach credit risk exposure	45,837	3,667	3,985	318
Advanced IRB approach				
Central governments or central banks	2,426	194	20	2
Institutions	4,286	343	2,399	192
Corporates	44,665	3,573	8,384	671
Retail				
– Small and medium-sized enterprises (SMEs)	–	–	3,931	314
– Secured by real estate collateral	2,496	200	17,696	1,416
– Qualifying revolving retail	–	–	18,347	1,468
– Other retail	–	–	6,111	489
Equity	–	–	–	–
Securitisation positions	5,850	468	155	12
Non-credit obligation assets	3,430	274	2,441	195
Total advanced IRB credit risk exposure	63,153	5,052	59,484	4,759
Total credit risk weighted assets	108,990	8,719	63,469	5,077

Risk and capital position review

Analysis of credit risk

Table 31: CRB-C Geographic analysis of credit exposure

This table shows exposure at default pre-CCF and pre-CRM, broken down by credit exposure class and geographic location of the counterparty.

Barclays Group														
As at 31 December 2018	United Kingdom £m	Europe £m	France £m	Germany £m	Italy £m	Luxem- bourg £m	Switzer- land £m	Americas £m	United States £m	Asia £m	Japan £m	Africa and Middle East £m	South Africa £m	Total
Central governments or central banks	394	21,635	–	5,089	–	–	16,062	41,132	41,014	11,064	7,834	114	113	74,339
Institutions	12,304	5,326	1,546	876	13	836	295	8,912	7,103	2,598	1,703	830	97	29,970
Corporates	69,655	17,625	3,475	2,563	703	1,471	968	75,154	70,191	1,438	602	793	155	164,665
Retail	222,460	14,132	2	5,821	8,299	1	7	4	4	1	–	2	–	236,599
Equity	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total IRB approach	304,813	58,718	5,023	14,349	9,015	2,308	17,332	125,202	118,312	15,101	10,139	1,739	365	505,573
Central governments or central banks	129,100	58,119	32,130	17,002	2,737	–	489	9,392	9,380	74	28	1,250	–	197,935
Regional governments or local authorities	410	519	–	519	–	–	–	21	21	–	–	–	–	950
Public sector entities	177	5,632	1,456	4,099	5	–	–	64	47	24	–	–	–	5,897
Multilateral development banks	144	2,700	112	–	–	2,402	12	883	883	325	–	39	–	4,091
International organisations	–	920	–	–	–	920	–	–	–	–	–	–	–	920
Institutions	662	930	422	6	36	33	94	677	616	2,538	48	238	62	5,045
Corporates	17,696	13,523	1,974	1,403	1,531	1,386	897	21,840	16,932	4,704	712	2,829	73	60,592
Retail	14,828	5,178	148	1,635	7	13	83	86,554	86,202	86	–	379	8	107,025
Secured by mortgages on immovable property	5,627	2,096	654	30	7	153	130	713	54	104	–	352	16	8,892
Exposures in default	1,480	531	128	14	70	13	88	705	488	30	–	33	1	2,779
Items associated with particularly high risk	1,150	103	6	4	10	19	–	784	609	21	8	1,115	1,115	3,173
Covered bonds	32	90	34	–	–	–	–	–	–	–	–	–	–	122
Claims on institutions and corporates with a short term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Equity positions	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Other items	2,461	219	–	–	22	2	76	–	–	12	–	7	5	2,699
Total Standardised approach	173,767	90,560	37,064	24,712	4,425	4,941	1,869	121,633	115,232	7,918	796	6,242	1,280	400,120
Total	478,580	149,278	42,087	39,061	13,440	7,249	19,201	246,835	233,544	23,019	10,935	7,981	1,645	905,693

Risk and capital position review

Analysis of credit risk

Table 31: CRB-C Geographic analysis of credit exposure continued

Barclays Group														
As at 31 December 2017	United Kingdom £m	Europe £m	France £m	Germany £m	Italy £m	Luxembourg £m	Switzerland £m	Americas £m	United States £m	Asia £m	Japan £m	Africa and Middle East £m	South Africa £m	Total £m
Central governments or central banks	982	16,116	–	–	–	–	15,648	65,357	65,262	6,040	3,625	778	759	89,273
Institutions	13,792	3,894	2,112	356	6	293	89	5,831	4,961	3,122	2,170	662	145	27,301
Corporates	73,443	20,664	3,554	4,491	901	1,465	1,091	71,522	66,957	1,385	446	4,436	3,990	171,450
Retail	219,043	14,686	1	5,494	9,182	–	5	4	3	1	–	4,074	4,073	237,808
Equity	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total IRB approach	307,260	55,360	5,667	10,341	10,089	1,759	16,833	142,714	137,183	10,548	6,241	9,950	8,967	525,832
Central governments or central banks	103,013	58,726	17,646	34,155	1,047	–	505	3,932	3,924	74	22	1,187	170	166,932
Regional governments or local authorities	104	543	–	543	–	–	–	19	19	–	–	–	–	666
Public sector entities	55	177	24	–	3	–	–	45	26	95	–	17	–	389
Multilateral development banks	135	2,788	163	–	–	2,512	–	596	181	230	–	114	–	3,863
International organisations	–	981	–	–	–	981	–	–	–	–	–	–	–	981
Institutions	809	547	157	2	83	15	124	951	839	2,631	65	158	–	5,096
Corporates	16,255	11,631	2,136	1,561	1,531	734	663	18,673	14,539	3,012	76	2,994	107	52,565
Retail	13,620	5,002	125	1,516	14	33	58	85,737	85,390	41	–	840	176	105,240
Secured by mortgages on immovable property	5,733	1,927	662	41	43	175	96	752	69	118	7	394	21	8,924
Exposures in default	1,286	446	116	9	89	33	98	522	386	19	–	86	4	2,359
Items associated with particularly high risk	958	112	14	6	11	4	–	672	415	17	–	3	3	1,762
Covered bonds	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Equity positions	–	–	–	–	–	–	–	–	–	–	–	38	38	38
Other items	2,950	1,263	–	–	28	2	71	–	–	19	–	50	7	4,282
Total Standardised approach	144,918	84,143	21,043	37,833	2,849	4,489	1,615	111,899	105,788	6,256	170	5,881	526	353,097
Total	452,178	139,503	26,710	48,174	12,938	6,248	18,448	254,613	242,971	16,804	6,411	15,831	9,493	878,929

Exposures at default pre-CCF and CRM increased by £26.8bn to £905.7bn. The key movements by geographical area were as follows:

- United Kingdom increased £26.4bn to £478.6bn primarily driven by an increase in cash held at central banks as the Group strengthened its liquidity position, offset by a reduction in corporate exposure mainly due to securitisation activity
- Europe increased £9.8bn to £149.3bn primarily driven by an increase in cash at central bank in France offset by a reduction in central bank exposure in Germany reflecting changes in the Group liquidity pool composition
- Americas decreased £7.8bn to £246.8bn primarily driven by a decrease in exposure to the Government of the United States reflecting changes in the Group liquidity pool composition
- Africa and Middle East decreased £7.8bn to £8.0bn primarily driven by the regulatory deconsolidation of BAGL
- Asia increased £6.2bn to £23.0bn primarily driven by an increase in central bank balances reflecting changes in the Group liquidity pool composition

Risk and capital position review

Analysis of credit risk

Table 31a: CRB-C Geographic analysis of credit exposure for significant subsidiaries

Barclays Bank PLC														
As at 31 December 2018	United Kingdom £m	Europe £m	France £m	Germany £m	Italy £m	Luxembourg £m	Switzerland £m	Americas £m	United States £m	Asia £m	Japan £m	Africa and Middle East £m	South Africa £m	Total £m
Central governments or central banks	269	16,062	–	–	–	–	16,062	41,123	41,008	10,511	7,344	114	113	68,079
Institutions	5,841	4,894	1,435	876	13	835	295	6,937	5,814	1,399	624	830	97	19,901
Corporates	50,015	15,988	3,475	2,543	703	1,470	968	75,270	70,318	1,438	602	793	155	143,504
Retail	12	8,297	2	2	8,282	1	7	3	4	1	–	2	–	8,315
Equity	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total IRB approach	56,137	45,241	4,912	3,421	8,998	2,306	17,332	123,333	117,144	13,349	8,570	1,739	365	239,799
Central governments or central banks	70,231	41,805	32,015	1,461	2,737	–	–	2,289	2,289	46	–	1,250	–	115,621
Regional governments or local authorities	410	414	–	414	–	–	–	21	21	–	–	–	–	845
Public sector entities	161	4,256	1,425	2,752	5	–	–	63	47	24	–	–	–	4,504
Multilateral development banks	144	2,390	112	–	–	2,103	–	692	692	325	–	39	–	3,590
International organisations	–	817	–	–	–	817	–	–	–	–	–	–	–	817
Institutions	27,736	8,083	225	–	35	41	1,769	9,784	9,388	7,199	3,112	230	62	53,032
Corporates	47,333	18,581	1,968	1,385	1,531	7,059	831	66,202	21,298	4,587	707	2,345	73	139,048
Retail	3,886	447	125	1	6	13	31	161	46	63	–	88	3	4,645
Secured by mortgages on immovable property	3,071	1,774	541	29	7	153	43	431	42	63	–	218	3	5,557
Exposures in default	907	362	84	1	70	11	22	519	335	29	–	29	1	1,846
Items associated with particularly high risk	4,260	269	–	–	–	264	–	290	215	4	4	–	–	4,823
Covered bonds	–	34	34	–	–	–	–	–	–	–	–	–	–	34
Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Equity positions	580	–	–	–	–	–	–	–	–	–	–	–	–	580
Other items	683	23	–	–	22	–	–	–	–	–	–	–	–	706
Total Standardised approach	159,402	79,255	36,529	6,043	4,413	10,461	2,696	80,452	34,373	12,340	3,823	4,199	142	335,648
Total	215,539	124,496	41,441	9,464	13,411	12,767	20,028	203,785	151,517	25,689	12,393	5,938	507	575,447

Risk and capital position review

Analysis of credit risk

Table 31b: CRB-C Geographic analysis of credit exposure for significant subsidiaries

	United Kingdom £m	Europe £m	Germany £m	Americas £m	United States £m	Asia £m	Africa and Middle East £m	Total £m
As at 31 December 2018								
Central governments or central banks	125	–	–	–	–	–	–	125
Institutions	6,920	–	–	–	–	–	–	6,920
Corporates	19,506	–	–	10	–	–	–	19,516
Retail	222,449	–	–	–	–	–	–	222,449
Equity	–	–	–	–	–	–	–	–
Total IRB approach	249,000	–	–	10	–	–	–	249,010
Central governments or central banks	59,325	15,825	15,540	2,971	2,971	–	–	78,121
Regional governments or local authorities	–	105	105	–	–	–	–	105
Public sector entities	15	603	572	–	–	–	–	618
Multilateral development banks	–	298	–	191	191	–	–	489
International organisations	–	103	–	–	–	–	–	103
Institutions	1,561	197	–	10	10	–	–	1,768
Corporates	1,140	63	–	17	1	2	2	1,224
Retail	6,355	18	2	19	16	3	9	6,404
Secured by mortgages on immovable property	2,432	36	1	89	13	29	61	2,647
Exposures in default	279	5	1	4	–	–	4	292
Items associated with particularly high risk	227	–	–	–	–	–	–	227
Covered bonds	32	56	–	–	–	–	–	88
Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–	–	–	–
Equity positions	–	–	–	–	–	–	–	–
Other items	1,560	–	–	–	–	–	–	1,560
Total Standardised approach	72,926	17,309	16,221	3,301	3,202	34	76	93,646
Total	321,926	17,309	16,221	3,311	3,202	34	76	342,656

Risk and capital position review

Analysis of credit risk

Table 32: CRB-D – Concentration of exposures by industry

This table shows exposure at default pre-CCF and pre-CRM, broken down by credit exposure class and the industrial sector associated with the obligor or counterparty.

Barclays Group																			
	Agriculture, forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas, steam and air conditioning supply	Water supply	Construction	Wholesale and retail trade	Transport and storage	Accommodation and food service activities	Information and communication	Real estate activities	Professional, scientific and technical activities	Administrative and support service activities	Public administration and defence, compulsory social security	Education	Human health services and social work activities	Arts, entertainment and recreation	Other services	Total
As at 31 December 2018	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
1 Central Governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	74,214	125	-	-	-	74,339
2 Institutions	-	1	44	1,148	692	46	38	817	-	-	817	70	-	37	9,040	3,570	43	13,606	29,970
3 Corporates	3,212	9,643	31,569	12,101	1,420	4,212	12,254	6,924	3,537	5,874	27,656	14,352	-	5,207	225	6,937	3,406	16,136	164,665
6 Retail	1,685	23	344	2	1	455	1,136	154	535	29	1,311	582	-	339	78	395	183	229,347	236,599
5 Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Total IRB Approach	4,897	9,667	31,957	13,251	2,113	4,713	13,428	7,895	4,072	5,903	29,784	15,004	1	79,797	9,468	10,902	3,632	259,089	505,573
16 Central governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	196,944	-	-	-	991	197,935
17 Regional governments or local authorities	-	-	-	-	-	-	-	-	-	-	-	-	-	45	877	-	-	28	950
18 Public sector entities	-	44	-	49	16	-	-	4	-	-	-	1	-	1,038	11	167	-	4,567	5,897
19 Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,091	4,091
20 International organisations	-	-	-	-	-	-	-	-	-	-	-	-	920	-	-	-	-	-	920
21 Institutions	-	-	11	-	-	-	-	-	-	-	-	-	-	-	19	26	-	4,989	5,045
22 Corporates	99	2,525	8,372	1,269	274	966	5,349	2,410	734	760	1,405	3,519	135	4,758	28	312	411	27,266	60,592
24 Retail	-	-	4	1	-	-	12	1	3	-	77	25	-	108	-	4	3	106,787	107,025
26 Secured by mortgages on immovable property	13	5	8	-	-	2	69	5	112	-	405	111	-	45	1	48	18	8,050	8,892
28 Exposures in default	4	70	133	-	-	3	47	16	26	1	166	151	-	92	4	89	32	1,945	2,779
29 Items associated with particularly high risk	-	522	16	-	-	-	177	8	-	9	-	100	-	8	28	-	6	2,299	3,173
30 Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	122	122
31 Claims on institutions and corporate with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32 Collective investments undertakings (CIU)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33 Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34 Other exposures	-	1	5	4	1	3	18	12	1	15	-	21	-	8	7	13	1	2,589	2,699
35 Total Standardised approach	116	3,167	8,549	1,323	291	974	5,672	2,456	876	785	2,053	3,928	1,055	203,046	975	659	471	163,724	400,120
36 Total	5,013	12,834	40,506	14,574	2,404	5,687	19,100	10,351	4,948	6,688	31,837	18,932	1,056	282,843	10,443	11,561	4,103	422,813	905,693

Risk and capital position review

Analysis of credit risk

Table 32: CRB-D – Concentration of exposures by industry continued

Barclays Group																			
	Agriculture, forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas, steam and air conditioning supply	Water supply	Construction	Wholesale and retail trade	Transport and storage	Accommodation and food service activities	Information and communication	Real estate activities	Professional, scientific and technical activities	Administrative and support service activities	Public administration and defence, compulsory social security	Education	Human health services and social work activities	Arts, entertainment and recreation	Other services	Total
As at	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
31 December 2017																			
1 Central governments or central banks	–	–	–	–	–	–	–	–	–	–	–	–	–	89,060	156	2	–	55	89,273
2 Institutions	–	–	31	1,263	362	43	–	347	–	–	47	102	1	132	9,810	4,025	45	11,093	27,301
3 Corporates	3,484	10,127	33,356	12,036	1,349	4,685	13,168	8,871	3,731	6,017	27,543	13,340	1	7,058	885	6,810	2,917	16,073	171,450
6 Retail	1,775	5	360	5	1	457	1,246	168	560	31	1,322	588	–	545	74	388	181	230,102	237,808
5 Equity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
15 Total IRB Approach	5,259	10,132	33,747	13,304	1,712	5,185	14,414	9,386	4,291	6,048	28,912	14,030	1	96,795	10,925	11,225	3,143	257,323	525,832
16 Central governments or central banks	–	–	337	–	–	–	70	–	–	–	–	–	85	159,854	187	–	–	6,399	166,932
17 Regional governments or local authorities	–	–	–	9	–	–	–	–	–	–	–	–	–	24	557	–	–	76	666
18 Public sector entities	–	1	–	71	25	–	23	1	–	–	–	–	1	150	–	68	–	49	389
19 Multilateral development banks	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,863	3,863
20 International organisations	–	–	–	–	–	–	–	–	–	–	–	–	981	–	–	–	–	–	981
21 Institutions	–	–	17	–	–	–	4	–	–	–	–	–	2	–	11	26	–	5,036	5,096
22 Corporates	41	2,486	8,031	1,049	210	856	4,794	1,904	275	533	1,474	2,711	318	4,396	15	172	470	22,830	52,565
24 Retail	12	–	16	186	–	27	12	1	5	–	118	47	73	4	–	4	2	104,733	105,240
26 Secured by mortgages on immovable property	69	–	12	–	–	5	59	9	144	–	468	266	5	25	1	87	12	7,762	8,924
28 Exposures in default	105	34	49	33	1	1	176	12	38	11	199	75	18	153	4	70	28	1,352	2,359
29 Items associated with particularly high risk	–	425	19	29	4	14	59	–	–	1	1	22	–	10	31	–	5	1,142	1,762
30 Covered bonds	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
31 Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
32 Collective investments undertakings (CIU)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
33 Equity exposures	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	37	38
34 Other exposures	–	1	6	4	1	13	19	15	–	32	–	17	–	15	4	11	1	4,143	4,282
35 Total Standardised approach	227	2,947	8,487	1,381	241	916	5,216	1,942	462	577	2,260	3,138	1,484	164,631	810	438	518	157,422	353,097
36 Total	5,486	13,079	42,234	14,685	1,953	6,101	19,630	11,328	4,753	6,625	31,172	17,168	1,485	261,426	11,735	11,663	3,661	414,745	878,929

Exposures at default pre-CCF and CRM increased by £26.8bn to £905.7bn. The key movements by industry sector were as follows:

- Public administration and defence, compulsory social security increased by £21.4bn to £282.8bn primarily driven by an increase in cash held at central banks as the Group strengthened its liquidity position
- Other Services increased £8.1bn to £422.8bn primarily driven by the BAGL equity holding

Risk and capital position review

Analysis of credit risk

Table 32a: CRB-D – Concentration of exposures by industry for significant subsidiaries

Barclays Bank PLC																			
	Agriculture, forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas, steam and air conditioning supply	Water supply	Construction	Wholesale and retail trade	Transport and storage	Accommodation and food service activities	Information and communication	Real estate activities	Professional, scientific and technical activities	Administrative and support service activities	Public administration and defence, compulsory social security	Education	Human health services and social work activities	Arts, entertainment and recreation	Other services	Total
As at 31 December 2018	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
1 Central Governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	68,079	-	-	-	-	68,079
2 Institutions	-	1	43	1,067	603	46	38	816	-	-	817	62	-	37	2,650	3,054	38	10,629	19,901
3 Corporates	120	9,619	30,935	12,021	1,398	3,967	11,412	6,778	3,232	5,865	13,197	13,862	-	5,113	126	6,586	3,220	16,053	143,504
6 Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,315	8,315
5 Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Total IRB Approach	120	9,620	30,978	13,088	2,001	4,013	11,450	7,594	3,232	5,865	14,014	13,924	-	73,229	2,776	9,640	3,258	34,997	239,799
16 Central governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	114,101	-	-	-	1,520	115,621
17 Regional governments or local authorities	-	-	-	-	-	-	-	-	-	-	-	-	-	45	772	-	-	28	845
18 Public sector entities	-	44	-	49	16	-	-	3	-	-	-	-	-	1,007	11	153	-	3,221	4,504
19 Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,590	3,590
20 International organisations	-	-	-	-	-	-	-	-	-	-	-	-	817	-	-	-	-	-	817
21 Institutions	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53,021	53,032
22 Corporates	20	2,517	8,239	1,255	270	867	4,897	2,256	677	520	1,346	2,979	135	6,057	24	263	400	106,326	139,048
24 Retail	-	-	3	-	-	-	9	-	1	-	45	13	-	107	-	-	1	4,466	4,645
26 Secured by mortgages on immovable property	1	5	7	-	-	2	50	5	110	-	328	99	-	45	1	43	17	4,844	5,557
28 Exposures in default	-	70	130	-	-	1	45	15	24	-	153	122	-	87	4	85	29	1,081	1,846
29 Items associated with particularly high risk	-	104	5	-	-	-	10	-	-	-	-	60	-	-	-	-	6	4,638	4,823
30 Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	34
31 Claims on institutions and corporate with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32 Collective investments undertakings (CIU)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33 Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	580	580
34 Other exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	706	706
35 Total Standardised approach	21	2,740	8,395	1,304	286	870	5,011	2,279	812	520	1,872	3,273	952	121,449	812	544	453	184,055	335,648
36 Total	141	12,360	39,373	14,392	2,287	4,883	16,461	9,873	4,044	6,385	15,886	17,197	952	194,678	3,588	10,184	3,711	219,052	575,447

Risk and capital position review

Analysis of credit risk

Table 32b: CRB-D – Concentration of exposures by industry for significant subsidiaries

Barclays Bank UK PLC																			
	Agriculture, forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas, steam and air conditioning supply	Water supply	Construction	Wholesale and retail trade	Transport and storage	Accommodation and food service activities	Information and communication	Real estate activities	Professional, scientific and technical activities	Administrative and support service activities	Public administration and defence, compulsory social security	Education	Human health services and social work activities	Arts, entertainment and recreation	Other services	Total
As at 31 December 2018	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
1 Central Governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	125	-	-	-	125
2 Institutions	-	-	-	1	-	-	-	1	-	-	-	7	1	-	6,390	516	4	-	6,920
3 Corporates	3,092	1	176	34	-	172	394	74	256	8	14,119	391	-	83	99	351	177	89	19,516
6 Retail	1,685	23	344	2	1	455	1,136	154	535	29	1,311	582	-	339	78	395	183	215,197	222,449
5 Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Total IRB Approach	4,777	24	520	37	1	627	1,530	229	791	37	15,430	980	1	422	6,692	1,262	364	215,286	249,010
16 Central governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	78,121	-	-	-	-	78,121
17 Regional governments or local authorities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	105	-	-	-	105
18 Public sector entities	-	-	-	-	-	-	-	-	-	-	-	1	-	31	-	14	-	572	618
19 Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	489	489
20 International organisations	-	-	-	-	-	-	-	-	-	-	-	-	103	-	-	-	-	-	103
21 Institutions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,768	1,768
22 Corporates	65	-	11	-	-	1	37	4	19	-	70	45	-	2	4	5	4	957	1,224
24 Retail	-	-	1	1	-	-	3	-	3	-	31	12	-	2	-	5	1	6,345	6,404
26 Secured by mortgages on immovable property	13	-	1	-	-	-	18	-	2	-	78	12	-	1	-	5	2	2,515	2,647
28 Exposures in default	3	-	-	-	-	2	1	-	2	-	11	6	-	5	-	4	3	255	292
29 Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	227	227
30 Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	88	88
31 Claims on institutions and corporate with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32 Collective investments undertakings (CIU)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33 Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34 Other exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,560	1,560
35 Total Standardised approach	81	-	13	1	-	3	59	4	26	-	190	76	103	78,162	109	33	10	14,776	93,646
36 Total	4,858	24	533	38	1	630	1,589	233	817	37	15,620	1,056	104	78,584	6,801	1,295	374	230,062	342,656

Risk and capital position review

Analysis of credit risk

Table 33: CRB-E – Residual maturity analysis credit exposures

This table shows exposure at default pre-CCF and pre-CRM, broken down by credit exposure class and residual maturity. Residual maturity is the remaining number of years before an obligation becomes due according to the existing terms of the agreement.

Barclays Group		Net Exposure Value				No stated maturity £m	Total £m
		On Demand £m	<= 1 year £m	> 1 year <= 5 years £m	> 5 years £m		
As at 31 December 2018							
1	Central Governments or central banks	62,892	1,809	5,134	4,504	–	74,339
2	Institutions	3,903	6,028	8,033	11,762	244	29,970
3	Corporates	14,649	23,723	105,959	20,287	47	164,665
4	Retail	75,343	2,079	15,570	143,607	–	236,599
5	Equity	–	–	–	–	–	–
6	Total IRB Approach	156,787	33,639	134,696	180,160	291	505,573
7	Central governments or central banks	135,816	17,353	28,145	16,609	12	197,935
8	Regional governments or local authorities	379	126	261	183	1	950
9	Public sector entities	188	1,988	2,966	755	–	5,897
10	Multilateral development banks	–	482	2,529	1,080	–	4,091
11	International organisations	–	–	331	589	–	920
12	Institutions	549	4,210	169	117	–	5,045
13	Corporates	9,613	22,140	19,699	8,958	182	60,592
14	Retail	98,007	2,667	3,536	2,815	–	107,025
15	Secured by mortgages on immovable property	–	3,933	4,545	414	–	8,892
16	Exposures in default	299	679	1,179	622	–	2,779
17	Items associated with particularly high risk	–	522	397	1,111	1,143	3,173
18	Covered bonds	–	43	45	34	–	122
19	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–
20	Collective investments undertakings	–	–	–	–	–	–
21	Equity exposures	–	–	–	–	–	–
22	Other exposures	384	–	67	2,161	87	2,699
23	Total standardised approach	245,235	54,143	63,869	35,448	1,425	400,120
24	Total	402,022	87,782	198,565	215,608	1,716	905,693

Risk and capital position review

Analysis of credit risk

Table 33: CRB-E – Residual maturity analysis of credit exposures continued

As at 31 December 2017		Net Exposure Value				No stated maturity £m	Total £m
		On Demand £m	<= 1 year £m	> 1 year <= 5 years £m	> 5 years £m		
1	Central Governments or central banks	72,059	4,836	5,200	7,178	–	89,273
2	Institutions	3,786	5,464	7,523	10,528	–	27,301
3	Corporates	16,941	22,225	106,639	25,645	–	171,450
4	Retail	74,595	2,999	15,906	144,308	–	237,808
5	Equity	–	–	–	–	–	–
6	Total IRB Approach	167,381	35,524	135,268	187,659	–	525,832
7	Central governments or central banks	93,246	42,121	14,417	17,092	56	166,932
8	Regional governments or local authorities	70	43	533	20	–	666
9	Public sector entities	49	71	211	58	–	389
10	Multilateral development banks	–	502	2,431	930	–	3,863
11	International organisations	–	–	594	387	–	981
12	Institutions	156	4,528	210	202	–	5,096
13	Corporates	6,619	19,070	17,774	9,085	17	52,565
14	Retail	73,995	24,571	4,467	2,129	78	105,240
15	Secured by mortgages on immovable property	12	1,344	2,749	4,798	21	8,924
16	Exposures in default	94	1,042	968	255	–	2,359
17	Items associated with particularly high risk	–	407	456	–	899	1,762
18	Covered bonds	–	–	–	–	–	–
19	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–
20	Collective investments undertakings	–	–	–	–	–	–
21	Equity exposures	–	–	38	–	–	38
22	Other exposures	997	313	87	1,983	902	4,282
23	Total standardised approach	175,238	94,012	44,935	36,939	1,973	353,097
24	Total	342,619	129,536	180,203	224,598	1,973	878,929

Exposures at default pre-CCF and CRM increased by £26.8bn to £905.7bn. The key movements in On Demand, less than 1 year and 1 to 5 years residual maturity primarily driven by changes in cash held at central bank as the Group strengthened its liquidity position.

Risk and capital position review

Analysis of credit risk

Table 33a: CRB-E – Residual maturity analysis of credit exposures for significant subsidiaries

As at 31 December 2018		Net Exposure Value				No stated maturity £m	Total £m
		On Demand £m	<= 1 year £m	> 1 year <= 5 years £m	> 5 years £m		
1	Central Governments or central banks	56,825	1,745	5,130	4,379	–	68,079
2	Institutions	3,036	3,305	7,894	5,422	244	19,901
3	Corporates	13,662	22,447	100,193	7,155	47	143,504
4	Retail	–	305	631	7,379	–	8,315
5	Equity	–	–	–	–	–	–
6	Total IRB Approach	73,523	27,802	113,848	24,335	291	239,799
7	Central governments or central banks	78,951	13,631	8,150	14,887	2	115,621
8	Regional governments or local authorities	379	126	157	183	–	845
9	Public sector entities	31	1,154	2,707	612	–	4,504
10	Multilateral development banks	–	171	2,423	996	–	3,590
11	International organisations	–	–	273	544	–	817
12	Institutions	6,176	15,016	822	31,018	–	53,032
13	Corporates	9,363	79,453	19,036	31,196	–	139,048
14	Retail	2,933	248	457	1,007	–	4,645
15	Secured by mortgages on immovable property	–	1,953	3,191	413	–	5,557
16	Exposures in default	38	614	888	306	–	1,846
17	Items associated with particularly high risk	–	3,633	609	–	581	4,823
18	Covered bonds	–	–	–	34	–	34
19	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–
20	Collective investments undertakings	–	–	–	–	–	–
21	Equity exposures	–	580	–	–	–	580
22	Other exposures	2	–	–	693	11	706
23	Total standardised approach	97,873	116,579	38,713	81,889	594	335,648
24	Total	171,396	144,381	152,561	106,224	885	575,447

Risk and capital position review

Analysis of credit risk

Table 33b: CRB-E – Residual maturity analysis of credit exposures for significant subsidiaries

As at 31 December 2018		Net Exposure Value				No stated maturity £m	Total £m
		On Demand £m	<= 1 year £m	> 1 year <= 5 years £m	> 5 years £m		
1	Central Governments or central banks	–	–	–	125	–	125
2	Institutions	2	18	104	6,796	–	6,920
3	Corporates	1,080	986	4,468	12,982	–	19,516
4	Retail	69,549	1,860	14,904	136,136	–	222,449
5	Equity	–	–	–	–	–	–
6	Total IRB Approach	70,631	2,864	19,476	156,039	–	249,010
7	Central governments or central banks	51,041	5,439	19,995	1,646	–	78,121
8	Regional governments or local authorities	–	–	105	–	–	105
9	Public sector entities	–	217	258	143	–	618
10	Multilateral development banks	–	310	95	84	–	489
11	International organisations	–	–	58	45	–	103
12	Institutions	284	1,468	1	15	–	1,768
13	Corporates	118	624	212	270	–	1,224
14	Retail	5,457	269	70	608	–	6,404
15	Secured by mortgages on immovable property	–	1,949	698	–	–	2,647
16	Exposures in default	54	31	138	69	–	292
17	Items associated with particularly high risk	–	219	8	–	–	227
18	Covered bonds	–	43	45	–	–	88
19	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–
20	Collective investments undertakings	–	–	–	–	–	–
21	Equity exposures	–	–	–	–	–	–
22	Other exposures	390	–	–	1,170	–	1,560
23	Total standardised approach	57,344	10,569	21,683	4,050	–	93,646
24	Total	127,975	13,433	41,159	160,089	–	342,656

Risk and capital position review

Analysis of credit risk

Credit risk mitigation

Barclays employs a range of techniques and strategies to actively mitigate credit risks. Within the regulatory framework this is commonly referred to as credit risk mitigation (CRM) and is fully discussed on pages 161 of this document. In the case of collateral, the recognition of the mitigant is reflected through regulatory calculations in several different ways. This is dependent on the nature of the collateral and the underlying approach applied to the exposure.

Table 34: Exposures covered by guarantees and credit derivatives

This table shows the proportion of credit risk exposures, covered by funded credit protection and unfunded credit protection in the form of guarantees or credit derivatives.

Under the Standardised approach, the risk weight of the underlying exposure covered is substituted by that of the credit protection provider – generally a central government or institution. Any uncovered exposure is risk weighted using the normal framework. The below table has been populated post-substitution effect for Standardised approach.

Under the Advanced approach, Barclays typically recognises eligible collateral by reducing the modelled downturn loss given default (LGD) metric. The below table represents exposures covered by eligible collateral for Advanced calculations.

Financial collateral includes, but is not exclusive of, cash, debt securities, equities and gold, that can be used to directly reduce credit exposures subject to the Standardised approach. The impact of financial collateral CRM can be observed on pages 42 and 43, as a component of the difference between EAD pre-CRM and EAD-post CRM.

Credit exposure class	Exposures covered by unfunded credit protection		Exposures covered by funded credit protection
	Standardised £m	Advanced IRB £m	Advanced IRB £m
As at 31 December 2018			
Central governments or central banks	–	101	168
Institutions	197	427	192
Corporates	283	2,957	30,543
Retail	4	4,097	4,834
Exposures in default	2	–	–
Items associated with high risk	–	–	–
Securitisation positions	–	–	–
Non-credit obligation assets	–	–	–
Total	486	7,582	35,737
As at 31 December 2017^a			
Central governments or central banks	–	213	146
Institutions	–	1,381	759
Corporates	65	4,329	31,398
Retail	–	4,379	5,521
Exposures in default	–	–	–
Items associated with high risk	–	–	–
Equity	–	–	–
Securitisation positions	–	–	–
Non-credit obligation assets	–	–	–
Total	65	10,302	37,824

Note

a Prior year information has been revised to reflect the exposure value (rather than the value of the underlying collateral)

The exposures covered by funded credit protection decreased by £2.1bn to £35.7bn primarily driven by the regulatory deconsolidation of BAGL.

Risk and capital position review

Analysis of credit risk

Table 34a: Exposures covered by guarantees and credit derivatives for significant subsidiaries

Credit exposure class	Exposures covered by unfunded credit protection		Exposures covered by funded credit protection
	Standardised £m	Advanced IRB £m	Advanced IRB £m
Barclays Bank PLC			
As at 31 December 2018			
Central governments or central banks	–	101	168
Institutions	–	427	167
Corporates	121	2,846	17,093
Retail	–	3,798	–
Exposures in default	2	–	–
Items associated with high risk	–	–	–
Securitisation positions	–	–	–
Non-credit obligation assets	–	–	–
Total	123	7,172	17,428

Table 34b: Exposures covered by guarantees and credit derivatives for significant subsidiaries

Credit exposure class	Exposures covered by unfunded credit protection		Exposures covered by funded credit protection
	Standardised £m	Advanced IRB £m	Advanced IRB £m
Barclays Bank UK PLC			
As at 31 December 2018			
Central governments or central banks	–	–	–
Institutions	197	–	25
Corporates	–	110	13,450
Retail	–	36	4,834
Exposures in default	–	–	–
Items associated with high risk	–	–	–
Securitisation positions	–	–	–
Non-credit obligation assets	–	–	–
Total	197	146	18,309

Risk and capital position review

Analysis of credit risk

Table 35: CR3 – CRM techniques

This table shows the use of CRM techniques broken down by loans and debt securities. This table includes unsecured and secured exposures including collateral, financial guarantees and credit derivatives for both Standardised and Internal rating based approach.

	Exposures unsecured – Carrying amount £m	Exposures to be secured £m	Exposures secured by collateral £m	Exposures secured by financial guarantees £m	Exposures secured by credit derivatives £m
As at 31 December 2018					
1 Total loans	338,042	184,797	184,153	603	40
2 Total debt securities	49,138	595	–	595	–
3 Total exposures	387,180	185,392	184,153	1,198	40
4 Of which defaulted	3,516	3,295	3,293	2	–
As at 31 December 2017^a					
1 Total loans	325,074	187,311	186,080	1,209	22
2 Total debt securities	44,723	1,340	–	1,340	–
3 Total exposures	369,797	188,651	186,080	2,549	22
4 Of which defaulted	3,822	2,849	2,848	1	–

Note

a Prior year figures have been revised to reflect on-balance sheet exposures

- The total unsecured and secured exposure increased £14.1bn to £572.6bn as the Group strengthened its liquidity position
- Exposures secured by collateral decreased by £1.9bn to £184.2bn primarily due to regulatory deconsolidation of BAGL partially offset by increased mortgage lending during the year

Risk and capital position review

Analysis of credit risk

Table 36: CR4 Standardised – Credit Risk exposure and CRM effect

This table shows the impact of CRM and credit conversion factors (CCF) on exposure values, broken down by credit exposure class. This table includes exposures subject to the Standardised approach only.

The term 'before CCF and CRM' means the original gross exposures before the application of credit conversion factor and before the application of risk mitigation techniques.

	Exposures before CCF and CRM		Exposures post-CCF and CRM		RWA and RWA density	
	On-balance sheet amount £m	Off-balance sheet amount £m	On-balance sheet amount £m	Off-balance sheet amount £m	RWA £m	RWA density £m
As at 31 December 2018						
1 Central governments or central banks	158,783	39,152	159,029	44,263	179	0%
2 Regional governments or local authorities	845	105	605	1	15	3%
3 Public sector entities	5,609	288	5,621	65	63	1%
4 Multilateral development banks	4,091	–	4,091	–	–	0%
5 International Organisations	920	–	920	–	–	0%
6 Institutions	3,447	1,598	3,396	738	1,357	32%
7 Corporates	24,926	35,666	15,967	11,017	25,699	95%
8 Retail	30,563	76,462	29,914	146	22,545	75%
9 Secured by mortgages on immovable property	8,869	23	8,868	7	3,557	40%
10 Exposures in default	2,394	385	2,338	192	3,047	120%
11 Items associated with particularly high risk	3,148	25	3,147	13	6,017	190%
12 Covered Bonds	122	–	122	–	27	22%
13 Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	0%
14 Claims in the form of CIU	–	–	–	–	–	0%
15 Equity exposures	–	–	–	–	–	0%
16 Other items	2,699	–	2,699	–	709	26%
17 Total	246,416	153,704	236,717	56,442	63,215	22%
As at 31 December 2017						
1 Central governments or central banks	139,280	27,652	139,342	30,674	408	0%
2 Regional governments or local authorities	577	89	576	3	9	2%
3 Public sector entities	336	53	336	11	105	30%
4 Multilateral development banks	3,863	–	3,863	–	–	0%
5 International Organisations	981	–	981	–	–	0%
6 Institutions	3,942	1,154	3,902	570	1,602	36%
7 Corporates	21,208	31,356	14,047	9,749	22,575	95%
8 Retail	28,592	76,648	27,982	148	21,086	75%
9 Secured by mortgages on immovable property	8,889	36	8,889	17	3,712	42%
10 Exposures in default	2,255	104	2,231	65	2,773	121%
11 Items associated with particularly high risk	1,629	132	1,516	111	2,553	157%
12 Covered Bonds	–	–	–	–	–	0%
13 Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	0%
14 Claims in the form of CIU	–	–	–	–	–	0%
15 Equity exposures	38	–	38	–	94	250%
16 Other items	4,282	–	4,282	–	859	20%
17 Total	215,872	137,224	207,985	41,348	55,776	22%

Further information about the key drivers for pre-CCF and pre-CRM exposures are provided in Tables 31, 32 and 33, and post-CCF and post-CRM exposures are provided in Table 29.

Risk and capital position review

Analysis of credit risk

Table 37: CR7– Effect on RWA of credit derivatives used as CRM techniques (IRB)

This table shows the effect of credit derivatives on the IRB approach to capital requirements' calculations. It assumes the absence of recognition of credit derivative as a CRM technique (pre – credit derivatives RWAs).

	Pre-credit derivatives RWAs		Actual RWAs	
	As at 31 December 2018 £m	As at 31 December 2017 £m	As at 31 December 2018 £m	As at 31 December 2017 £m
1 Exposures under Foundation IRB	–	–	–	–
2 Central governments and central banks	–	–	–	–
3 Institutions	–	–	–	–
4 Corporates – SME	–	–	–	–
5 Corporates – Specialised Lending	–	–	–	–
6 Corporates – Other	–	–	–	–
7 Exposures under Advanced IRB	127,810	130,253	127,774	130,173
8 Central governments and central banks	2,682	3,563	2,682	3,563
9 Institutions	7,259	6,901	7,259	6,898
10 Corporates – SME	9,380	9,868	9,380	9,868
11 Corporates – Specialised Lending	4,721	4,241	4,721	4,241
12 Corporates – Other	40,123	41,580	40,087	41,503
13 Retail – Secured by real estate SME	–	–	–	–
14 Retail – Secured by real estate non-SME	20,205	20,033	20,205	20,033
15 Retail – Qualifying revolving	19,867	20,009	19,867	20,009
16 Retail – Other SME	3,931	3,881	3,931	3,881
17 Retail – Other non-SME	6,190	6,639	6,190	6,639
18 Equity IRB	–	–	–	–
19 Other non credit-obligation assets	13,452	13,538	13,452	13,538
20 Total	127,810	130,253	127,774	130,173

The decrease in pre-credit derivative RWAs and Actual RWAs was primarily driven by a change in the Group's liquidity pool composition and securitisation of corporate loans.

Risk and capital position review

Analysis of credit risk

Credit quality analysis of Standardised exposures

Credit rating agencies

Under the Standardised approach, ratings assigned by External Credit Assessment Institutions (ECAIs) are used in the calculation of RWAs. The PRA determines which agencies may be used to determine the correct risk weight. Barclays uses ratings assigned by the following agencies for credit risk calculations:

- Standard & Poor's
- Moody's
- Fitch

These ratings are used in the calculation of risk weights for the central governments and central banks, institutions and corporate exposure classes^a.

Rated and unrated counterparties

The following section summarises the rules governing standardised calculations.

Each exposure must be assigned to one of six credit quality steps if a rating is available, as defined in the table below^b. After assignment to a quality step, exposure class and maturity are then used to determine the risk weight percentage. Exposures cannot be assigned a risk weight lower than that of the sovereign risk of the country in which the asset is located. The following table is a simplified version of the risk weight allocation process.

Where a credit rating is not available, a default treatment is applied as specified by regulatory guidance. In most cases this default risk weight equates to that which is applied to credit quality step 3.

Table 38: Relationship of long-term external credit ratings to credit quality steps under the Standardised approach

Credit Quality Step	Standard and Poor's	Moody's	Fitch
Credit Quality Step 1	AAA to AA-	Aaa to Aa3	AAA to AA-
Credit Quality Step 2	A+ to A-	A1 to A3	A+ to A-
Credit Quality Step 3	BBB+ to BBB-	Baa1 to Baa3	BBB+ to BBB-
Credit Quality Step 4	BB+ to BB-	Ba1 to Ba3	BB+ to BB-
Credit Quality Step 5	B+ to B-	B1 to B3	B+ to B-
Credit Quality Step 6	CCC+ and below	Caa1 and below	CCC+ and below

Table 39: Credit quality steps and risk weights under the standardised approach

This table shows the prescribed risk weights associated with credit quality steps.

Credit Quality Step	Institution (includes banks)				
	Sovereign method	Credit assessment method			
		Corporates	Credit assessment method	Maturity > 3 months	Maturity 3 months or less
Credit Quality Step 1		20%	20%	20%	0%
Credit Quality Step 2		50%	50%	50%	20%
Credit Quality Step 3		100%	100%	50%	50%
Credit Quality Step 4		100%	100%	100%	100%
Credit Quality Step 5		150%	100%	100%	50%
Credit Quality Step 6		150%	150%	150%	150%

Exposures to international organisations are generally assigned a risk weight of 0%.

If considered fully and completely secured by residential property, measured on the basis of the Loan-to-value ratio, a retail exposure is assigned a risk weight of 35%. If only partially secured, a more complex framework is applied. Other retail exposures are generally assigned a risk weight of 75%.

The unsecured portion of a past due exposure is assigned a risk weight of either 150% or 100%, depending on the specific credit risk adjustments recognised.

Items of high risk are assigned a risk weight of 150%, whereas Equity positions not subject to threshold calculations are generally assigned a risk weight of 100%.

Other items are assigned a risk weight of 100%, unless they relate to cash in hand (0%) or items in the course of collection (20%).

Notes

a DBRS is used to calculate risk weight for securitisation exposures only. Please see page 172 for further details.

b The mapping of external ratings to credit quality steps applicable as at year-end 2018 is found in Supervisory Statement SS10/13, published by the Prudential Regulation Authority in December 2013 (see <http://www.bankofengland.co.uk/pru/Documents/publications/ss/2013/ss1013.pdf>). Implementing technical standards that will update these mappings have been finalised by the Joint Committee of the three European Supervisory Authorities (EBA, ESMA and EIOPA) and are awaiting endorsement by the European Commission (see eba.europa.eu/regulation-and-policy/external-credit-assessment-institutions-ecal).

Risk and capital position review

Analysis of credit risk

Table 40: CR5-A Analysis of exposures by asset classes and risk weight pre-CCF and CRM under the standardised approach

This table shows exposure at default pre-CRM, broken down by Credit Exposure Class and risk weight. This table includes exposures subject to the Standardised approach only.

		EAD by asset classes and risk weights pre CCF and CRM																	Total £m	of which: Unrated £m
		0% £m	2% £m	4% £m	10% £m	20% £m	35% £m	50% £m	70% £m	75% £m	100% £m	150% £m	250% £m	370% £m	1250% £m	Others £m	De- ducted £m			
As at 31 December 2018																				
1	Central governments or central banks	197,722	-	-	-	12	-	48	-	-	153	-	-	-	-	-	-	-	197,935	1,641
2	Regional governments or local authorities	534	-	-	-	415	-	-	-	-	-	-	-	-	-	-	-	-	950	395
3	Public sector entities	5,605	-	-	-	247	-	24	-	-	22	-	-	-	-	-	-	-	5,897	269
4	Multilateral development banks	4,091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,091	3
5	International Organisations	920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	920	-
6	Institutions	-	-	-	-	3,725	-	857	-	-	463	-	-	-	-	-	-	-	5,045	791
7	Corporates	-	-	-	-	1,319	-	3,256	-	-	55,059	952	-	-	5	-	-	-	60,592	50,875
8	Retail	-	-	-	-	-	-	-	-	107,025	-	-	-	-	-	-	-	-	107,025	107,025
9	Secured by mortgages on immovable property	-	-	-	-	-	8,192	2	-	183	514	-	-	-	-	-	-	-	8,892	8,892
10	Exposures in default	-	-	-	-	-	-	-	-	-	1,611	1,168	-	-	-	-	-	-	2,779	2,498
11	Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	1,899	1,274	-	-	-	-	-	3,173	3,170
12	Covered Bonds	-	-	-	-	122	-	-	-	-	-	-	-	-	-	-	-	-	122	-
13	Claims on institutions and corporate with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	Claims in the form of CIU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	Other items	1,408	-	-	-	725	-	-	-	-	566	-	-	-	-	-	-	-	2,699	2,681
17	Total	210,280	-	-	-	6,565	8,192	4,187	-	107,208	58,388	4,019	1,274	-	5	-	-	-	400,120	178,239
As at 31 December 2017																				
1	Central governments or central banks	166,417	-	-	-	20	-	175	-	-	289	31	-	-	-	-	-	-	166,932	5,443
2	Regional governments or local authorities	545	-	-	-	112	-	-	-	9	-	-	-	-	-	-	-	-	666	123
3	Public sector entities	-	-	-	-	300	-	50	-	39	-	-	-	-	-	-	-	-	389	284
4	Multilateral development banks	3,863	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,863	-
5	International Organisations	981	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	981	-
6	Institutions	-	-	-	-	3,232	-	1,360	-	-	502	-	-	-	2	-	-	-	5,096	970
7	Corporates	-	-	-	-	694	-	3,759	-	-	47,454	655	-	-	2	-	-	-	52,564	43,520
8	Retail	-	-	-	-	-	-	-	-	105,238	2	-	-	-	-	-	-	-	105,240	105,240
9	Secured by mortgages on immovable property	-	-	-	-	-	7,856	2	-	260	806	-	-	-	-	-	-	-	8,924	8,924
10	Exposures in default	-	-	-	-	-	-	-	-	-	1,354	1,005	-	-	-	-	-	-	2,359	2,312
11	Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	1,649	113	-	-	-	-	-	1,762	1,755
12	Covered Bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	Claims on institutions and corporate with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	Claims in the form of CIU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	Equity exposures	-	-	-	-	-	-	-	-	-	-	-	38	-	-	-	-	-	38	38
16	Other items	1,674	-	-	-	2,190	-	-	-	-	418	-	-	-	-	-	-	-	4,282	4,276
17	Total	173,480	-	-	-	6,548	7,856	5,346	-	105,498	50,873	3,340	151	-	4	-	-	-	353,096	172,885

Standardised credit risk exposure pre-CRM increased by £47.0bn to £400.1bn primarily driven by:

- An increase in cash held at central banks as the Group strengthened its liquidity position
- An increase in the corporate exposures primarily due to lending activity and appreciation of period end USD against GBP

Risk and capital position review

Analysis of credit risk

Table 41: CR5-B Analysis of exposures by asset classes and risk weight post-CCF and CRM under the standardised approach

The difference between exposure at default pre-CRM set out in Table 40 and exposure at default post-CRM below is the impact of financial collateral and CCF as described in Table 36.

	0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1250%	Others	De- ducted	Total	of which: Unrated	
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	
As at 31 December 2018																			
1 Central governments or central banks	203,079	-	-	-	12	-	48	-	-	153	-	-	-	-	-	-	203,292	1,414	
2 Regional governments or local authorities	530	-	-	-	76	-	-	-	-	-	-	-	-	-	-	-	606	79	
3 Public sector entities	5,463	-	-	-	190	-	16	-	-	17	-	-	-	-	-	-	5,686	207	
4 Multilateral development banks	4,091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,091	3	
5 International Organisations	920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	920	-	
6 Institutions	-	-	-	-	3,024	-	681	-	-	429	-	-	-	-	-	-	4,134	681	
7 Corporates	-	-	-	-	795	-	1,554	-	-	24,108	521	-	-	-	5	-	26,984	22,103	
8 Retail	-	-	-	-	-	-	-	-	30,060	-	-	-	-	-	-	-	30,060	30,060	
9 Secured by mortgages on immovable property	-	-	-	-	-	8,180	2	-	180	513	-	-	-	-	-	-	8,875	8,875	
10 Exposures in default	-	-	-	-	-	-	-	-	-	1,497	1,033	-	-	-	-	-	2,530	2,375	
11 Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	1,888	1,272	-	-	-	-	3,160	3,157	
12 Covered Bonds	-	-	-	-	122	-	-	-	-	-	-	-	-	-	-	-	122	-	
13 Claims on institutions and corporate with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14 Claims in the form of CIU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15 Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16 Other items	1,408	-	-	-	725	-	-	-	-	566	-	-	-	-	-	-	2,699	2,681	
17 Total	215,491	-	-	-	4,944	8,180	2,301	-	30,240	27,283	3,442	1,272	-	5	-	-	293,159	71,636	
As at 31 December 2017																			
1 Central governments or central banks	169,519	-	-	-	20	-	175	-	-	271	31	-	-	-	-	-	170,016	4,736	
2 Regional governments or local authorities	545	-	-	-	32	-	-	-	-	2	-	-	-	-	-	-	579	36	
3 Public sector entities	-	-	-	-	288	-	23	-	-	36	-	-	-	-	-	-	347	269	
4 Multilateral development banks	3,863	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,863	-	
5 International Organisations	981	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	981	-	
6 Institutions	-	-	-	-	2,919	-	1,063	-	-	488	-	-	-	2	-	-	4,472	798	
7 Corporates	-	-	-	-	350	-	1,762	-	-	21,353	329	-	-	2	-	-	23,796	19,408	
8 Retail	-	-	-	-	-	-	-	-	28,128	2	-	-	-	-	-	-	28,130	28,130	
9 Secured by mortgages on immovable property	-	-	-	-	-	7,850	2	-	257	797	-	-	-	-	-	-	8,906	8,905	
10 Exposures in default	-	-	-	-	-	-	-	-	-	1,341	955	-	-	-	-	-	2,296	2,265	
11 Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	1,516	111	-	-	-	-	1,627	1,620	
12 Covered Bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13 Claims on institutions and corporate with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14 Claims in the form of CIU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15 Equity exposures	-	-	-	-	-	-	-	-	-	-	-	38	-	-	-	-	38	38	
16 Other items	1,674	-	-	-	2,190	-	-	-	-	418	-	-	-	-	-	-	4,282	4,276	
17 Total	176,582	-	-	-	5,799	7,850	3,025	-	28,385	24,708	2,831	149	-	4	-	-	249,333	70,481	

Standardised credit risk exposure post-CRM increased by £43.8bn to £293.2bn primarily driven by:

- An increase in cash held at central banks as the Group strengthened its liquidity position
- An increase in the corporate exposures primarily due to lending activity and appreciation of period end USD against GBP

Analysis of credit risk

Credit quality analysis of IRB exposures

The following section provides breakdowns of inputs into risk weighted asset calculations. Please note that risk weights and risk factors may be volatile in granular breakdowns of wholesale exposures, especially in categories that are more sparsely populated. This is often due to the addition or removal of a relatively large exposure to or from narrow categories when its risk factors are different to the category average. This happens in the normal course of business, for instance, following new lending, repayments, or syndications. See page 151 for a discussion of IRB models.

Table 42: Internal default grade probabilities and mapping to external ratings

The table below illustrates the approximate relationship between external rating agency grades and the PD bands for wholesale exposures. The EBA and internal Default Grade (DG) bands are based on TTC PD. Note that this relationship is dynamic, and therefore, varies over time, region and industry.

EBA PD Range %	Internal DG Band	Default Probability			Financial statements description	Moody's	Standard and Poor's
		>Min	Mid	<=Max			
0.00 to < 0.15	1	0.00%	0.01%	0.02%	Strong	Aaa, Aa1, Aa2, Aa3	AAA, AA+,AA
	2	0.02%	0.03%	0.03%		A1	AA-
	3	0.03%	0.04%	0.05%		A2,A3	A+
	4	0.05%	0.08%	0.10%		A3, Baa1	A, A-
	5	0.10%	0.13%	0.15%		Baa2	BBB+
0.15 to < 0.25	6	0.15%	0.18%	0.20%	Strong	Baa2	BBB+
	7	0.20%	0.23%	0.25%		Baa3	BBB
0.25 to < 0.50	8	0.25%	0.28%	0.30%	Strong	Baa3	BBB
	9	0.30%	0.35%	0.40%		Baa3	BBB-
	10	0.40%	0.45%	0.50%		Ba1	BBB-
0.50 to < 0.75	11	0.50%	0.55%	0.60%	Strong	Ba1	BBB-
	12	0.60%	–	–		Ba2	BB+
0.75 to < 2.50	12	–	0.90%	1.20%	Satisfactory	Ba2	BB
	13	1.20%	1.38%	1.55%		Ba3	BB
	14	1.55%	1.85%	2.15%		Ba3	BB-
	15	2.15%	–	–		B1	BB-
2.50 to < 10.00	15	–	2.60%	3.05%	Satisfactory	B1	BB-
	16	3.05%	3.75%	4.45%		B2	B+
	17	4.45%	5.40%	6.35%		B2	B+
	18	6.35%	7.50%	8.65%		B3	B
	19	8.65%	10.00%	–		B3	B
10.00 to < 100.00	19	–	–	11.35%	Higher risk	B3	B
	20	11.35%	15.00%	18.65%		Caa1	B-
	21	18.65%	30.00%	99.99%		Caa2, Caa3, Ca, C	CCC+, CCC, CCC-, CC+, CC, C
100.00 (Default)	22			100.00%		D	D

Risk and capital position review

Analysis of credit risk

IRB obligor grade disclosure

The following tables show credit risk exposure at default post-CRM for the advanced IRB approach and foundation IRB approach for portfolios within both the trading and banking books. Separate tables are provided for the following credit exposure classes: central governments and central banks (Table 43), institutions (Table 44), corporates (Table 45), corporates subject to slotting (Table 47), Retail SME (Table 48), secured retail (Table 49), revolving retail (Table 50) and other retail (Table 51).

Barclays' Model Risk Management group reviews and approves the application of post model adjustments to models that do not fully reflect the risk of the underlying exposures.

Table 43: CR6 Credit risk exposures by exposure class and PD range for central governments and central banks IRB

	Original on-balance sheet gross exposure £m	Off-balance sheet exposures pre CCF £m	Average CCF %	EAD post CRM and post CCF £m	Average PD %	Number of obligors	Average LGD %	Average Maturity Years	RWA £m	RWA Density %	EL £m	Value Adjustment and Provisions £m
As at 31 December 2018												
0.00 to < 0.15	73,733	101	31.5%	73,627	0.0%	26	45.0%	1.4	2,469	3.4%	3	
0.15 to < 0.25	–	–	–	–	–	–	–	–	–	–	–	
0.25 to < 0.50	504	1	–	504	0.3%	4	36.2%	1.6	213	42.2%	1	
0.50 to < 0.75	–	–	–	–	–	–	–	–	–	–	–	
0.75 to < 2.50	–	–	–	–	–	–	–	–	–	–	–	
2.50 to < 10.00	–	–	–	–	–	–	–	–	–	–	–	
10.00 to < 100.00	–	–	–	–	–	–	–	–	–	–	–	
100.00 (Default)	–	–	–	–	–	–	–	–	–	–	–	
Total	74,237	102	31.6%	74,131	0.0%	30	45.0%	1.4	2,682	3.6%	3	(5)
As at 31 December 2017												
0.00 to < 0.15	87,706	836	87.8%	88,372	0.0%	85	45.0%	1.5	3,250	3.7%	3	
0.15 to < 0.25	2	1	49.8%	2	0.2%	7	45.3%	5.4	1	52.3%	–	
0.25 to < 0.50	710	–	–	710	0.4%	7	31.8%	1.7	298	42.0%	1	
0.50 to < 0.75	–	–	–	–	–	–	–	–	–	–	–	
0.75 to < 2.50	5	6	50.9%	8	1.4%	4	45.0%	0.8	7	91.3%	–	
2.50 to < 10.00	3	5	0.0%	4	5.4%	7	45.2%	9.7	7	193.3%	–	
10.00 to < 100.00	–	–	–	–	–	–	–	–	–	–	–	
100.00 (Default)	–	–	–	–	–	–	–	–	–	–	–	
Total	88,426	848	83.2%	89,096	0.0%	110	44.9%	1.5	3,563	4.0%	4	–

The exposure weighted average risk weight associated with advanced IRB exposure to central governments and central banks decrease by 0.4% to 3.6%. This was primarily driven by a change in the Group's liquidity pool composition.

The decrease in number of obligors is primarily driven by the regulatory deconsolidation of BAGL.

Risk and capital position review

Analysis of credit risk

Table 44: CR6 Credit risk exposures by exposure class and PD range for institutions

	Original on-balance sheet gross exposure £m	Off-balance sheet exposures pre CCF £m	Average CCF %	EAD post CRM and post CCF £m	Average PD %	Number of obligors	Average LGD %	Average Maturity Years	RWA £m	RWA Density %	EL £m	Value Adjustment and Provisions £m
As at 31 December 2018												
0.00 to < 0.15	21,498	6,383	55.6%	24,580	0.0%	693	41.3%	16.0	5,219	21.3%	4	
0.15 to < 0.25	278	25	79.9%	297	0.2%	73	48.6%	0.8	125	42.1%	–	
0.25 to < 0.50	379	163	71.8%	488	0.4%	155	48.9%	3.5	373	76.4%	1	
0.50 to < 0.75	85	13	79.7%	90	0.6%	52	44.7%	4.4	83	91.6%	–	
0.75 to < 2.50	265	113	81.8%	351	1.8%	131	42.9%	1.2	398	113.2%	3	
2.50 to < 10.00	393	182	63.7%	475	4.4%	114	45.0%	9.7	850	178.9%	9	
10.00 to < 100.00	28	27	134.6%	44	11.9%	20	11.2%	10.1	26	58.7%	1	
100.00 (Default)	26	113	98.4%	137	100.0%	25	14.2%	1.4	186	135.4%	5	
Total	22,951	7,019	60.4%	26,462	0.7%	1,263	41.4%	15.2	7,260	27.5%	23	(39)
As at 31 December 2017												
0.00 to < 0.15	18,857	6,023	57.5%	21,475	0.0%	1,003	41.6%	19.4	4,851	22.6%	4	
0.15 to < 0.25	452	87	18.3%	408	0.2%	82	30.9%	3.0	141	34.5%	–	
0.25 to < 0.50	399	100	59.2%	449	0.4%	132	51.3%	4.3	354	78.8%	1	
0.50 to < 0.75	148	65	46.5%	193	0.6%	76	43.5%	4.2	156	80.6%	–	
0.75 to < 2.50	298	36	54.4%	318	1.4%	201	48.0%	2.4	388	122.1%	2	
2.50 to < 10.00	366	160	53.0%	442	3.9%	124	40.1%	8.3	653	147.6%	7	
10.00 to < 100.00	18	49	39.5%	32	21.5%	33	32.0%	4.1	54	168.9%	2	
100.00 (Default)	198	46	56.7%	218	100.0%	29	18.1%	9.2	301	138.1%	15	
Total	20,736	6,566	52.7%	23,535	1.1%	1,680	41.5%	18.1	6,898	29.3%	31	(2)

The exposure weighted average risk weight associated with advanced IRB exposures to financial institutions decreased 1.8% to 27.5%. This was primarily driven by an increase in exposures in the highest quality default band. The decrease in number of obligors is primarily driven by the regulatory deconsolidation of BAGL.

Risk and capital position review

Analysis of credit risk

Table 45: CR6 Credit risk exposures by exposure class and PD range for corporates

	Original on-balance sheet gross exposure £m	Off-balance sheet exposures pre CCF £m	Average CCF %	EAD post CRM and post CCF £m	Average PD %	Number of obligors	Average LGD %	Average Maturity Years	RWA £m	RWA Density %	EL £m	Value Adjusted and Provisions £m
As at 31 December 2018												
0.00 to < 0.15	24,892	69,184	51.9%	56,573	0.1%	9,063	37.0%	7.3	15,285	27.1%	14	
0.15 to < 0.25	5,087	5,462	44.8%	6,448	0.2%	4,604	42.2%	4.3	3,349	51.9%	5	
0.25 to < 0.50	6,186	9,370	56.3%	10,767	0.4%	9,664	38.7%	3.8	6,431	59.7%	15	
0.50 to < 0.75	3,148	3,557	53.4%	4,525	0.6%	4,378	37.5%	9.1	3,239	71.6%	10	
0.75 to < 2.50	6,033	6,614	53.2%	8,698	1.4%	10,480	31.5%	4.7	6,716	77.2%	39	
2.50 to < 10.00	4,266	7,447	51.3%	7,322	4.5%	6,243	31.6%	4.6	7,858	107.3%	103	
10.00 to < 100.00	1,467	2,493	54.9%	2,704	19.2%	2,032	31.9%	3.0	4,414	163.2%	173	
100.00 (Default)	1,344	430	63.9%	1,520	100.0%	966	27.4%	3.8	2,180	143.4%	262	
Total	52,423	104,557	52.1%	98,557	2.6%	47,430	36.4%	6.2	49,472	50.2%	621	(634)
As at 31 December 2017												
0.00 to < 0.15	23,814	66,890	49.0%	54,960	0.1%	8,096	36.2%	7.5	12,380	22.6%	13	
0.15 to < 0.25	5,693	8,006	46.5%	9,059	0.2%	4,066	41.2%	5.0	4,325	47.7%	7	
0.25 to < 0.50	7,061	9,488	49.3%	11,350	0.4%	11,212	42.1%	3.5	7,143	62.9%	17	
0.50 to < 0.75	3,718	4,095	51.7%	5,451	0.6%	6,359	37.2%	5.8	3,786	69.5%	12	
0.75 to < 2.50	8,249	8,784	39.0%	11,243	1.4%	23,408	31.9%	4.0	8,852	78.7%	49	
2.50 to < 10.00	5,535	7,963	43.0%	9,017	4.4%	62,251	32.0%	3.9	9,437	104.7%	125	
10.00 to < 100.00	1,576	2,137	44.5%	2,379	20.4%	3,598	33.9%	3.4	3,795	159.6%	175	
100.00 (Default)	1,312	330	54.2%	1,518	100.0%	1,887	35.3%	4.5	1,686	111.0%	418	
Total	56,958	107,693	47.0%	104,977	2.6%	120,877	36.4%	6.0	51,404	49.0%	816	(757)

The exposure weighted average risk weight associated with IRB exposures to corporates increased 1.2% to 50.2%. This was primarily due to an increase in the RWA density within lower default band, partially offset by corporate loans reductions within the 0.75 < 10.00 default bands as well as the regulatory deconsolidation of BAGL.

The decrease in number of obligors is primarily driven by the regulatory deconsolidation of BAGL.

Risk and capital position review

Analysis of credit risk

Table 46: CR6 Credit risk exposures by exposure class and PD range for corporate of which: SMEs

	Original on-balance sheet gross exposure £m	Off-balance sheet exposures pre CCF £m	Average CCF %	EAD post CRM and post CCF £m	Average PD %	Number of obligors	Average LGD %	Average Maturity Years	RWA £m	RWA Density %	EL £m	Value Adjustment and Provisions £m
As at 31 December 2018												
0.00 to < 0.15	3,806	1,068	58.6%	4,415	0.1%	5,440	24.5%	11.8	1,300	29.5%	1	
0.15 to < 0.25	1,076	309	40.5%	1,194	0.2%	3,496	34.0%	10.4	457	38.2%	1	
0.25 to < 0.50	1,932	512	54.2%	2,163	0.4%	7,562	32.1%	6.3	915	42.3%	2	
0.50 to < 0.75	1,151	281	47.2%	1,248	0.6%	3,321	32.6%	5.5	627	50.2%	3	
0.75 to < 2.50	2,774	664	47.8%	3,066	1.4%	7,334	30.8%	4.8	1,805	58.9%	13	
2.50 to < 10.00	2,090	469	61.5%	2,328	4.6%	4,488	32.3%	7.9	2,083	89.5%	35	
10.00 to < 100.00	721	82	51.2%	751	24.4%	1,586	33.5%	4.3	993	132.2%	67	
100.00 (Default)	873	48	59.6%	858	100.0%	695	20.8%	4.6	1,200	139.9%	101	
Total	14,423	3,433	53.4%	16,023	7.6%	33,922	29.4%	7.8	9,380	58.5%	223	(257)
As at 31 December 2017												
0.00 to < 0.15	4,419	1,202	50.0%	4,989	0.1%	4,338	22.9%	14.1	862	17.3%	1	
0.15 to < 0.25	1,368	318	48.2%	1,488	0.2%	2,812	33.0%	15.5	558	37.5%	1	
0.25 to < 0.50	1,900	564	53.0%	2,112	0.4%	8,736	33.8%	5.8	858	40.6%	3	
0.50 to < 0.75	1,280	314	56.0%	1,436	0.6%	5,073	32.1%	5.4	678	47.2%	3	
0.75 to < 2.50	3,437	696	50.5%	3,746	1.4%	17,372	31.7%	5.3	2,265	60.5%	17	
2.50 to < 10.00	2,736	624	36.2%	3,009	4.4%	58,125	34.4%	4.9	2,627	87.3%	45	
10.00 to < 100.00	1,054	136	49.6%	917	24.4%	2,990	35.4%	5.4	1,229	134.1%	85	
100.00 (Default)	549	52	14.0%	556	100.0%	1,594	27.3%	3.6	791	142.3%	111	
Total	16,743	3,906	46.5%	18,253	5.4%	101,040	30.2%	8.5	9,868	54.1%	266	(218)

Movements are consistent with Table 45

Risk and capital position review

Analysis of credit risk

Table 47: CR10 Corporate exposures subject to the slotting approach

Slotting, also known as specialised lending, is an approach that is applied to financing of individual projects where the repayment is highly dependent on the performance of the underlying pool or collateral. It uses a standard set of rules for the calculation of RWAs, based upon an assessment of factors such as the financial strength of the counterparty. The requirements for the application of the Slotting approach are detailed in CRR article 153.

Barclays Group			On-balance sheet amount £m	Off-balance sheet amount £m	Risk weight %	Exposure amount £m	RWA £m	Expected losses £m
Regulatory categories		Remaining maturity						
As at 31 December 2018								
Category 1	Strong	Less than 2.5 years	1,566	721	50%	2,020	1,010	–
		Equal to or more than 2.5 years	2,050	495	70%	2,373	1,662	9
Category 2	Good	Less than 2.5 years	1,281	208	70%	1,418	992	6
		Equal to or more than 2.5 years	557	91	90%	639	575	9
Category 3	Satisfactory	Less than 2.5 years	53	17	115%	67	77	2
		Equal to or more than 2.5 years	203	2	115%	205	235	6
Category 4	Weak	Less than 2.5 years	40	–	250%	40	99	3
		Equal to or more than 2.5 years	28	–	250%	28	71	2
Category 5	Default	Less than 2.5 years	303	6	–	248	–	124
		Equal to or more than 2.5 years	52	7	–	54	–	28
Total		Less than 2.5 years	3,243	952		3,793	2,178	135
		Equal to or more than 2.5 years	2,890	595		3,299	2,543	54
As at 31 December 2017								
Category 1	Strong	Less than 2.5 years	1,312	452	50%	1,538	769	–
		Equal to or more than 2.5 years	2,124	369	70%	2,361	1,653	9
Category 2	Good	Less than 2.5 years	789	142	70%	855	598	3
		Equal to or more than 2.5 years	536	249	90%	698	628	6
Category 3	Satisfactory	Less than 2.5 years	168	9	115%	171	196	5
		Equal to or more than 2.5 years	222	2	115%	222	255	6
Category 4	Weak	Less than 2.5 years	13	–	250%	13	32	1
		Equal to or more than 2.5 years	31	–	250%	31	77	2
Category 5	Default	Less than 2.5 years	205	14	0%	196	–	98
		Equal to or more than 2.5 years	120	5	0%	122	–	61
Total		Less than 2.5 years	2,487	617		2,773	1,595	107
		Equal to or more than 2.5 years	3,033	625		3,434	2,613	84

The RWAs subject to specialised lending for IRB approach remained broadly stable at £4.7bn (2017: £4.2bn)

Risk and capital position review

Analysis of credit risk

Table 47a: CR10 – Corporate exposures subject to specialised lending IRB for significant subsidiaries

Barclays Bank PLC			On-balance sheet amount £m	Off-balance sheet amount £m	Risk weight %	Exposure amount £m	RWA £m	Expected losses £m
Regulatory categories	Remaining maturity							
As at 31 December 2018								
Category 1	Strong	Less than 2.5 years	1,254	660	50%	1,677	839	–
		Equal to or more than 2.5 years	1,696	450	70%	1,992	1,395	8
Category 2	Good	Less than 2.5 years	1,147	168	70%	1,258	881	5
		Equal to or more than 2.5 years	325	91	90%	405	365	7
Category 3	Satisfactory	Less than 2.5 years	38	17	115%	52	60	1
		Equal to or more than 2.5 years	165	2	115%	167	192	5
Category 4	Weak	Less than 2.5 years	39	–	250%	39	97	3
		Equal to or more than 2.5 years	8	–	250%	8	19	1
Category 5	Default	Less than 2.5 years	251	3	–	195	–	98
		Equal to or more than 2.5 years	26	7	–	28	–	13
Total		Less than 2.5 years	2,729	848		3,221	1,877	107
		Equal to or more than 2.5 years	2,220	550		2,600	1,971	34

Table 47b: CR10 – Corporate exposures subject to specialised lending IRB for significant subsidiaries

Barclays Bank UK PLC			On-balance sheet amount £m	Off-balance sheet amount £m	Risk weight %	Exposure amount £m	RWA £m	Expected losses £m
Regulatory categories	Remaining maturity							
As at 31 December 2018								
Category 1	Strong	Less than 2.5 years	123	30	50%	133	67	–
		Equal to or more than 2.5 years	290	–	70%	290	204	1
Category 2	Good	Less than 2.5 years	133	17	70%	137	95	1
		Equal to or more than 2.5 years	233	–	90%	234	211	2
Category 3	Satisfactory	Less than 2.5 years	15	–	115%	15	18	–
		Equal to or more than 2.5 years	38	–	115%	38	43	1
Category 4	Weak	Less than 2.5 years	1	–	250%	1	2	–
		Equal to or more than 2.5 years	21	–	250%	21	51	2
Category 5	Default	Less than 2.5 years	53	3	–	53	–	27
		Equal to or more than 2.5 years	26	–	–	26	–	14
Total		Less than 2.5 years	325	50		339	182	28
		Equal to or more than 2.5 years	608	–		609	509	20

Risk and capital position review

Analysis of credit risk

Table 48: CR6 Credit risk exposures by exposure class and PD range for retail SME

	Original on-balance sheet gross exposure £m	Off-balance sheet exposures pre CCF £m	Average CCF %	EAD post CRM and post CCF £m	Average PD %	Number of obligors	Average LGD %	RWA £m	RWA Density %	EL £m	Value Adjusted and Provisions £m
As at 31 December 2018											
0.00 to < 0.15	85	21	3264%	764	0.1%	367,276	51.2%	75	9.8%	–	
0.15 to < 0.25	135	51	482%	379	0.2%	120,768	47.3%	65	17.1%	–	
0.25 to < 0.50	456	183	219%	858	0.4%	203,216	43.2%	194	22.7%	1	
0.50 to < 0.75	452	170	145%	697	0.6%	120,392	37.5%	177	25.4%	2	
0.75 to < 2.50	1,759	588	123%	2,482	1.5%	307,428	36.4%	881	35.5%	13	
2.50 to < 10.00	1,353	377	137%	1,872	4.8%	241,945	41.3%	952	50.9%	38	
10.00 to < 100.00	844	71	231%	1,009	27.2%	107,118	34.3%	620	61.5%	87	
100.00 (Default)	805	40	81%	838	100.0%	33,654	19.4%	967	115.4%	85	
Total	5,889	1,501	201%	8,899	14.0%	1,501,797	38.1%	3,931	44.2%	226	(75)
As at 31 December 2017											
0.00 to < 0.15	45	37	1302%	738	0.1%	467,205	52.2%	71	9.6%	–	
0.15 to < 0.25	128	65	363%	369	0.2%	120,361	44.4%	58	15.7%	–	
0.25 to < 0.50	465	217	172%	863	0.4%	227,859	39.4%	171	19.8%	1	
0.50 to < 0.75	490	188	126%	734	0.6%	125,325	33.8%	165	22.5%	2	
0.75 to < 2.50	1,926	631	118%	2,704	1.5%	371,796	35.3%	920	34.0%	14	
2.50 to < 10.00	1,521	382	124%	2,036	4.8%	285,568	40.2%	1,016	49.9%	40	
10.00 to < 100.00	918	68	244%	1,095	26.7%	118,064	34.6%	692	63.2%	121	
100.00 (Default)	654	33	80%	682	100.0%	46,313	23.2%	788	115.5%	105	
Total	6,147	1,621	174%	9,221	12.2%	1,762,491	37.4%	3,881	42.1%	283	(98)

The exposure weighted average risk weight associated with advanced IRB exposure to retail SMEs remained broadly stable at 44.2%.

The decrease in number of obligors is primarily driven by the regulatory deconsolidation of BAGL.

Risk and capital position review

Analysis of credit risk

Table 49: CR6 Credit risk exposures by exposure class and PD range for secured retail

	Original on-balance sheet gross exposure £m	Off-balance sheet exposures pre CCF £m	Average CCF %	EAD post CRM and post CCF £m	Average PD %	Number of obligors	Average LGD %	RWA £m	RWA Density %	EL £m	Value Adjustment and Provisions £m
As at 31 December 2018											
0.00 to < 0.15	26,419	1,574	99.2%	27,782	0.1%	146,091	12.1%	1,269	4.6%	12	
0.15 to < 0.25	10,998	1,062	97.0%	11,695	0.2%	99,057	12.6%	834	7.1%	7	
0.25 to < 0.50	28,952	1,906	97.8%	30,165	0.4%	204,514	8.7%	1,805	6.0%	11	
0.50 to < 0.75	28,415	1,163	98.8%	29,216	0.6%	201,827	9.1%	2,619	9.0%	18	
0.75 to < 2.50	35,112	1,522	99.6%	36,473	1.3%	237,345	12.5%	7,257	19.9%	64	
2.50 to < 10.00	6,886	153	100.2%	7,050	4.8%	45,113	11.1%	2,665	37.8%	43	
10.00 to < 100.00	4,043	92	100.3%	4,148	27.9%	28,939	9.8%	2,381	57.4%	138	
100.00 (Default)	1,861	14	99.6%	1,867	100.0%	16,736	18.1%	1,374	73.6%	303	
Total	142,686	7,486	98.8%	148,396	2.8%	979,622	10.9%	20,204	13.6%	596	(390)
As at 31 December 2017											
0.00 to < 0.15	29,236	2,345	98.8%	31,233	0.1%	184,624	11.7%	1,431	4.6%	13	
0.15 to < 0.25	18,821	1,772	90.9%	19,948	0.2%	151,452	9.5%	1,047	5.2%	8	
0.25 to < 0.50	35,280	3,305	90.9%	37,663	0.4%	260,722	10.0%	2,602	6.9%	16	
0.50 to < 0.75	20,453	986	82.9%	21,147	0.6%	146,938	10.0%	2,085	9.9%	15	
0.75 to < 2.50	22,892	1,132	74.8%	23,851	1.2%	161,471	12.5%	4,601	19.3%	42	
2.50 to < 10.00	8,656	211	85.4%	8,900	4.6%	48,759	14.4%	4,217	47.4%	63	
10.00 to < 100.00	3,912	112	98.4%	4,031	30.4%	29,279	10.1%	2,431	60.3%	220	
100.00 (Default)	1,992	6	41.3%	1,991	100.0%	17,337	18.9%	1,619	81.3%	326	
Total	141,243	9,869	88.6%	148,764	2.9%	1,000,582	11.1%	20,033	13.5%	703	(415)

The exposure weighted average risk weight associated with advanced IRB exposure to retail secured by real estate collateral remained broadly stable at 13.6%.

The decrease in number of obligors is primarily driven by the regulatory deconsolidation of BAGL.

Risk and capital position review

Analysis of credit risk

Table 50: CR6 Credit risk exposures by exposure class and PD range for revolving retail

	Original on-balance sheet gross exposure £m	Off-balance sheet exposures pre CCF £m	Average CCF %	EAD post CRM and post CCF £m	Average PD %	Number of obligors	Average LGD %	RWA £m	RWA Density %	EL £m	Value Adjustment and Provisions £m
As at 31 December 2018											
0.00 to < 0.15	992	21,896	43.8%	11,338	0.1%	10,081,695	74.8%	418	3.7%	7	
0.15 to < 0.25	814	7,212	13.8%	3,548	0.2%	2,569,062	76.4%	310	8.7%	6	
0.25 to < 0.50	1,784	9,102	13.6%	5,261	0.4%	3,430,949	76.8%	805	15.3%	18	
0.50 to < 0.75	1,426	4,628	9.4%	3,021	0.6%	1,376,738	77.3%	792	26.2%	22	
0.75 to < 2.50	5,163	7,903	6.4%	8,126	1.4%	2,545,788	77.7%	3,519	43.3%	104	
2.50 to < 10.00	5,518	2,839	4.0%	7,305	5.0%	1,916,649	76.3%	7,152	97.9%	292	
10.00 to < 100.00	1,827	229	12.0%	2,122	22.2%	550,443	75.5%	4,054	191.0%	367	
100.00 (Default)	1,199	209	5.3%	1,199	100.0%	481,347	78.7%	2,817	234.8%	728	
Total	18,723	54,018	21.1%	41,920	5.3%	22,952,671	76.3%	19,867	47.4%	1,544	(2,274)
As at 31 December 2017											
0.00 to < 0.15	1,017	22,675	52.0%	13,949	0.1%	10,873,580	78.5%	470	3.4%	7	
0.15 to < 0.25	800	6,547	16.9%	3,226	0.2%	1,883,169	77.1%	284	8.8%	5	
0.25 to < 0.50	1,667	8,284	12.4%	4,563	0.4%	2,264,756	76.8%	660	14.5%	14	
0.50 to < 0.75	1,497	4,457	8.2%	2,955	0.6%	1,209,685	77.2%	701	23.7%	17	
0.75 to < 2.50	5,247	7,639	9.4%	8,281	1.4%	2,706,695	77.2%	3,593	43.4%	106	
2.50 to < 10.00	5,756	2,861	33.0%	7,567	5.0%	1,745,275	75.6%	7,347	97.1%	301	
10.00 to < 100.00	1,897	216	10.1%	2,195	22.8%	529,816	75.3%	4,191	190.9%	389	
100.00 (Default)	1,220	218	0.0%	1,220	100.0%	341,885	77.8%	2,763	226.6%	761	
Total	19,101	52,897	24.0%	43,956	5.2%	21,554,861	77.2%	20,009	45.5%	1,600	(1,234)

The exposure weighted average risk weight associated with advanced IRB exposures to qualifying revolving retail, mainly comprising credit cards and overdrafts, increased by 1.9% to 47.4%. This was primarily driven by a decrease in exposures in the highest quality default band.

Value adjustments and provisions increased £1.0bn to £2.3bn primarily driven by the implementation of IFRS 9.

Risk and capital position review

Analysis of credit risk

Table 51: CR6 Credit risk exposures by exposure class and PD range for other retail exposures

	Original on-balance sheet gross exposure £m	Off-balance sheet exposures pre CCF £m	Average CCF %	EAD post CRM and post CCF £m	Average PD %	Number of obligors	Average LGD %	RWA £m	RWA Density %	EL £m	Value Adjust-ment and Provisions £m
As at 31 December 2018											
0.00 to < 0.15	26	3	82.2%	26	0.0%	126	4.0%	19	72.8%	–	
0.15 to < 0.25	24	–	99.7%	24	0.2%	2,879	89.8%	9	38.8%	–	
0.25 to < 0.50	456	–	76.6%	456	0.4%	56,177	89.9%	261	57.2%	2	
0.50 to < 0.75	846	–	100.0%	846	0.6%	101,615	90.3%	646	76.4%	5	
0.75 to < 2.50	3,312	–	72.3%	3,313	1.4%	398,085	90.6%	3,401	102.7%	45	
2.50 to < 10.00	1,069	–	100.0%	1,069	4.1%	138,390	89.5%	1,367	127.9%	43	
10.00 to < 100.00	200	–	100.0%	200	45.5%	28,282	87.7%	357	178.8%	89	
100.00 (Default)	363	–	100.0%	363	100.0%	55,902	79.6%	130	35.8%	330	
Total	6,296	3	86.7%	6,297	8.7%	781,456	89.2%	6,190	98.3%	514	(478)
As at 31 December 2017											
0.00 to < 0.15	3	1	112.9%	5	0.1%	617	61.7%	1	13.3%	–	
0.15 to < 0.25	29	10	117.5%	54	0.2%	2,904	46.1%	11	19.7%	–	
0.25 to < 0.50	425	1	93.7%	427	0.4%	53,787	88.1%	239	56.0%	2	
0.50 to < 0.75	826	–	99.5%	826	0.6%	98,315	88.6%	618	74.9%	5	
0.75 to < 2.50	3,416	1	95.6%	3,419	1.4%	387,593	87.8%	3,403	99.6%	44	
2.50 to < 10.00	1,534	6	57.8%	1,542	4.3%	144,344	76.0%	1,695	109.9%	53	
10.00 to < 100.00	323	–	97.6%	323	37.4%	29,857	73.2%	485	150.3%	102	
100.00 (Default)	355	–	1.0%	353	100.0%	46,560	74.3%	187	52.8%	256	
Total	6,911	19	73.4%	6,949	8.6%	763,977	83.6%	6,639	95.5%	462	(393)

The exposure weighted average risk weight associated with advanced IRB exposures to other retail, primarily comprised of unsecured personal loans, increased by 2.8% to 98.3% primarily due to the regulatory deconsolidation of BAGL.

Risk and capital position review

Analysis of credit risk

Table 52: CR1-A – Credit quality of exposures by exposure class and instrument

This table provides a comprehensive picture of the credit quality of the bank's on balance sheet and off balance sheet exposures

Barclays Group		Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period £m	Net values £m	Accumulated write-offs £m
As at 31 December 2018								
1	Central governments or central banks	–	74,339	5	–	5	74,335	–
2	Institutions	139	29,831	39	–	37	29,932	–
3	Corporates	2,143	162,522	663	–	(80)	164,001	34
4	Of which Specialised lending	368	7,316	29	–	13	7,655	–
5	Of which SMEs	922	16,934	257	–	56	17,599	–
6	Retail	4,490	232,109	3,217	–	1,174	233,382	884
7	Secured by real estate property	1,873	148,299	390	–	4	149,782	8
8	SMEs	–	–	–	–	–	–	–
9	Non-SMEs	1,873	148,299	390	–	4	149,782	8
10	Qualifying revolving	1,409	71,332	2,274	–	1,074	70,467	748
11	Other retail	1,209	12,478	554	–	96	13,133	128
12	SMEs	846	6,543	75	–	(20)	7,313	–
13	Non-SMEs	363	5,935	478	–	116	5,820	128
14	Equity	–	–	–	–	–	–	–
15	Total IRB approach	6,772	498,801	3,924	–	1,135	501,649	918
16	Central governments or central banks	–	197,935	–	–	–	197,935	–
17	Regional governments or local authorities	–	950	–	–	–	950	–
18	Public sector entities	13	5,900	3	–	3	5,910	–
19	Multilateral development banks	–	4,091	–	–	–	4,091	–
20	International organisations	–	920	–	–	–	920	–
21	Institutions	6	5,047	2	–	(2)	5,051	–
22	Corporates	1,666	60,792	385	–	128	62,072	36
23	Of which: SMEs	–	5,757	30	–	22	5,727	–
24	Retail	2,174	108,402	3,038	–	1,283	107,538	937
25	Of which: SMEs	–	3,784	38	–	(9)	3,746	–
26	Secured by mortgages on immovable property	767	8,895	4	–	(132)	9,658	–
27	Of which: SMEs	–	271	4	–	4	268	–
28	Exposures in default	4,625	–	1,846	–	481	2,779	32
29	Items associated with particularly high risk	–	3,173	–	–	(52)	3,173	–
30	Covered bonds	–	122	–	–	–	122	–
31	Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–
32	Collective investments undertakings	–	–	–	–	–	–	–
33	Equity exposures	–	–	–	–	–	–	–
34	Other exposures	–	2,699	–	–	–	2,699	–
35	Total standardised approach	4,625	398,928	3,432	–	1,227	400,120	973
36	Total	11,396	897,729	7,356	–	2,363	901,769	1,891
37	Of which: Loans	10,170	319,295	6,571	–	2,533	322,894	1,883
38	Of which: Debt securities	–	49,733	–	–	–	49,733	8
38a	Of which: Other exposures	20	199,937	12	–	(111)	199,945	–
39	Of which: Off-balance-sheet exposures	1,206	328,764	772	–	(59)	329,198	–

Risk and capital position review

Analysis of credit risk

Table 52: CR1-A – Credit quality of exposures by exposure class and instrument – continued

Barclays Group		Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period £m	Net values £m	Accumulated write-offs £m
As at 31 December 2017								
1	Central governments or central banks	–	89,273	–	–	–	89,273	–
2	Institutions	244	27,057	2	–	–	27,299	1
3	Corporates	1,987	169,463	773	–	155	170,677	12
4	Of which Specialised lending	344	6,455	17	–	(29)	6,783	–
5	Of which SMEs	601	20,047	218	–	104	20,430	8
6	Retail	4,479	233,328	2,140	–	46	235,667	884
7	Secured by real estate property	1,998	149,114	415	–	39	150,697	25
8	SMEs	–	–	–	–	–	–	–
9	Non-SMEs	1,998	149,114	415	–	39	150,697	25
10	Qualifying revolving	1,438	70,560	1,234	–	30	70,764	604
11	Other retail	1,043	13,654	491	–	(22)	14,206	255
12	SMEs	687	7,080	98	–	(89)	7,669	111
13	Non-SMEs	355	6,574	393	–	67	6,537	144
14	Equity	–	–	–	–	–	–	–
15	Total IRB approach	6,709	519,122	2,916	–	202	522,916	896
16	Central governments or central banks	–	166,932	–	–	–	166,932	–
17	Regional governments or local authorities	–	666	–	–	–	666	–
18	Public sector entities	12	390	4	–	4	398	2
19	Multilateral development banks	–	3,863	–	–	–	3,863	–
20	International organisations	–	981	–	–	–	981	–
21	Institutions	7	5,099	4	–	3	5,102	–
22	Corporates	733	52,663	255	–	(75)	53,141	43
23	Of which: SMEs	122	5,675	14	–	–	5,782	–
24	Retail	1,650	105,938	1,733	–	(203)	105,855	1,378
25	Of which: SMEs	87	3,437	50	–	(45)	3,473	30
26	Secured by mortgages on immovable property	1,332	8,924	182	–	24	10,075	158
27	Of which: SMEs	–	492	–	–	–	492	–
28	Exposures in default	3,738	–	1,371	–	(139)	2,367	715
29	Items associated with particularly high risk	–	1,814	52	–	–	1,762	6
30	Covered bonds	–	–	–	–	–	–	–
31	Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–
32	Collective investments undertakings	–	–	–	–	–	–	–
33	Equity exposures	–	38	–	–	–	38	–
34	Other exposures	3	4,282	1	–	1	4,284	–
35	Total standardised approach	3,738	351,590	2,231	–	(247)	353,097	1,587
36	Total	10,447	870,712	5,147	–	(45)	876,012	2,483
37	Of which: Loans	9,669	318,544	4,605	–	(65)	323,610	2,459
38	Of which: Debt securities	–	46,064	–	–	–	46,064	18
38a	Of which: Other exposures	21	188,879	124	–	16	188,776	6
39	Of which: Off-balance-sheet exposures	757	317,225	418	–	4	317,564	–

Non-defaulted exposures increased by £27.0bn to £897.7bn primarily driven by an increase in cash at central banks as the Group strengthened its liquidity position.

Specific credit risk adjustments and credit risk adjustment charges increased by £2.2bn and £2.4bn to £7.4bn and £2.4bn respectively, primarily driven by the implementation of IFRS9.

Risk and capital position review

Analysis of credit risk

Table 52a: CR1-A – Credit quality of exposures by exposure class and instrument for significant subsidiaries

Barclays Bank PLC		Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period ^a £m	Net values £m	Accumulated write-offs £m
As at 31 December 2018								
1	Central governments or central banks	–	68,079	–	–	–	68,079	–
2	Institutions	136	19,765	8	–	6	19,893	–
3	Corporates	1,414	142,091	509	–	(233)	142,996	130
4	Of which Specialised lending	287	6,062	26	–	11	6,322	24
5	Of which SMEs	313	8,331	140	–	(60)	8,504	7
6	Retail	636	7,679	322	–	(1,721)	7,993	228
7	Secured by real estate property	636	7,679	322	–	(64)	7,993	4
8	SMEs	–	–	–	–	–	–	–
9	Non-SMEs	636	7,679	322	–	(64)	7,993	4
10	Qualifying revolving	–	–	–	–	(1,199)	–	224
11	Other retail	–	–	–	–	(458)	–	–
12	SMEs	–	–	–	–	(95)	–	–
13	Non-SMEs	–	–	–	–	(363)	–	–
14	Equity	–	–	–	–	–	–	–
15	Total IRB approach	2,186	237,613	839	–	(1,949)	238,961	359
16	Central governments or central banks	–	115,621	–	–	–	115,621	–
17	Regional governments or local authorities	–	845	–	–	–	845	–
18	Public sector entities	13	4,507	3	–	2	4,517	–
19	Multilateral development banks	–	3,590	–	–	–	3,590	–
20	International organisations	–	817	–	–	–	817	–
21	Institutions	5	53,034	2	–	(1)	53,037	1
22	Corporates	1,309	139,202	335	–	82	140,176	174
23	Of which: SMEs	–	4,470	26	–	–	4,444	–
24	Retail	340	4,698	204	–	(45)	4,835	31
25	Of which: SMEs	–	3,418	37	–	–	3,380	–
26	Secured by mortgages on immovable property	510	5,561	4	–	4	6,067	–
27	Of which: SMEs	–	191	4	–	–	187	–
28	Exposures in default	2,177	–	331	–	(149)	1,846	15
29	Items associated with particularly high risk	–	4,823	–	–	(52)	4,823	–
30	Covered bonds	–	34	–	–	–	34	–
31	Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–
32	Collective investments undertakings	–	–	–	–	–	–	–
33	Equity exposures	–	580	–	–	–	580	–
34	Other exposures	–	706	–	–	–	706	–
35	Total standardised approach	2,177	334,018	547	–	(160)	335,648	206
36	Total	4,362	571,632	1,385	–	(2,109)	574,609	565
37	Of which: Loans	3,439	94,500	1,157	–	(1,379)	96,782	565
38	Of which: Debt securities	–	42,058	–	–	–	42,058	–
38a	Of which: Other exposures	20	221,634	12	–	(246)	221,642	–
39	Of which: Off-balance-sheet exposures	903	213,440	216	–	(484)	214,127	–

Note

a Credit risk adjustments charges in the period reflect the impact of assets transferred from Barclays Bank PLC to Barclays Bank UK PLC on 1 April 2018 as part of the ring-fencing transfer scheme

Risk and capital position review

Analysis of credit risk

Table 52b: CR1-A – Credit quality of exposures by exposure class and instrument for significant subsidiaries

Barclays Bank UK PLC

As at 31 December 2018		Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period ^a £m	Net values £m	Accumulated write-offs £m
1	Central governments or central banks	–	125	5	–	5	121	–
2	Institutions	3	6,917	31	–	31	6,889	–
3	Corporates	728	18,788	150	–	150	19,367	–
4	Of which Specialised lending	82	902	3	–	3	981	–
5	Of which SMEs	609	8,496	114	–	114	8,990	–
6	Retail	3,682	218,766	2,697	–	2,697	219,752	422
7	Secured by real estate property	1,218	140,622	68	–	68	141,772	5
8	SMEs	–	–	–	–	–	–	–
9	Non-SMEs	1,218	140,622	68	–	68	141,772	5
10	Qualifying revolving	1,255	65,692	2,075	–	2,075	64,871	245
11	Other retail	1,209	12,453	554	–	554	13,108	172
12	SMEs	846	6,543	75	–	75	7,313	65
13	Non-SMEs	363	5,910	478	–	478	5,795	107
14	Equity	–	–	–	–	–	–	–
15	Total IRB approach	4,413	244,597	2,882	–	2,882	246,128	422
16	Central governments or central banks	–	78,120	–	–	–	78,120	–
17	Regional governments or local authorities	–	105	–	–	–	105	–
18	Public sector entities	–	618	–	–	–	618	–
19	Multilateral development banks	–	489	–	–	–	489	–
20	International organisations	–	103	–	–	–	103	–
21	Institutions	–	1,768	–	–	–	1,768	–
22	Corporates	81	1,225	3	–	3	1,303	–
23	Of which: SMEs	–	284	–	–	–	284	–
24	Retail	220	6,498	237	–	237	6,480	12
25	Of which: SMEs	–	79	–	–	–	79	4
26	Secured by mortgages on immovable property	137	2,647	–	–	–	2,784	(1)
27	Of which: SMEs	–	81	–	–	–	81	–
28	Exposures in default	438	–	146	–	146	292	12
29	Items associated with particularly high risk	–	227	–	–	–	227	–
30	Covered bonds	–	88	–	–	–	88	–
31	Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–
32	Collective investments undertakings	–	–	–	–	–	–	–
33	Equity exposures	–	–	–	–	–	–	–
34	Other exposures	–	1,560	–	–	–	1,560	–
35	Total standardised approach	438	93,448	241	–	241	93,646	11
36	Total	4,851	338,045	3,123	–	3,123	339,774	433
37	Of which: Loans	4,588	192,369	2,595	–	2,595	194,363	433
38	Of which: Debt securities	–	–	–	–	–	–	–
38a	Of which: Other exposures	–	49,942	–	–	–	49,942	–
39	Of which: Off-balance-sheet exposures	263	95,734	528	–	528	95,469	–

Note

a Credit risk adjustments charges in the period reflect the impact of assets transferred from Barclays Bank PLC to Barclays Bank UK PLC on 1 April 2018 as part of the ring-fencing transfer scheme

Risk and capital position review

Analysis of credit risk

Table 53: CR1-B – Credit quality of exposures by industry or counterparty types

This table provides a comprehensive picture of the credit quality of the bank's on balance sheet and off balance sheet exposures by industry types.

Barclays Group		Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period £m	Net values £m	Accumulated write-offs £m
As at 31 December 2018								
1	Agriculture, forestry and fishing	567	4,446	87	–	75	4,926	–
2	Mining and quarrying	224	12,628	49	–	(27)	12,802	16
3	Manufacturing	343	40,204	79	–	8	40,467	10
4	Electricity, gas, steam and air conditioning supply	18	14,562	27	–	19	14,554	–
5	Water supply	–	2,405	2	–	–	2,404	–
6	Construction	142	5,549	33	–	12	5,658	2
7	Wholesale and retail trade	382	18,788	162	–	23	19,008	20
8	Transport and storage	83	10,323	68	–	33	10,338	–
9	Accommodation and food service activities	182	4,769	24	–	–	4,927	1
10	Information and communication	5	6,685	12	–	3	6,678	11
11	Real estate activities	763	31,094	117	–	69	31,740	25
12	Professional, scientific and technical activities	408	18,553	120	–	46	18,841	20
13	Administrative and support service activities	–	1,056	–	–	–	1,056	–
14	Public administration and defence, compulsory social security	282	282,581	77	–	77	282,786	20
15	Education	23	10,420	24	–	(22)	10,420	–
16	Human health services and social work activities	218	11,350	49	–	25	11,519	25
17	Arts, entertainment and recreation	113	3,995	14	–	6	4,094	1
18	Other services	7,644	418,320	6,413	–	2,013	419,552	1,741
19	Total	11,396	897,729	7,356	–	2,363	901,769	1,891

Risk and capital position review

Analysis of credit risk

Table 53: CR1-B – Credit quality of exposures by industry or counterparty types – continued

Barclays Group		Defaulted exposures	Non-defaulted exposure	Specific credit risk adjustment	General credit risk adjustment	Credit risk adjustment charges in the period	Net values	Accumulated write-offs
As at 31 December 2017		£m	£m	£m	£m	£m	£m	£m
1	Agriculture, forestry and fishing	421	5,081	20	–	36	5,482	3
2	Mining and quarrying	309	12,831	78	–	48	13,062	40
3	Manufacturing	217	41,746	75	–	48	41,888	12
4	Electricity, gas, steam and air conditioning supply	66	14,412	8	–	(4)	14,470	–
5	Water supply	–	1,935	1	–	1	1,934	–
6	Construction	119	5,978	25	–	(8)	6,072	14
7	Wholesale and retail trade	431	19,212	145	–	46	19,498	5
8	Transport and storage	58	11,310	36	–	9	11,332	1
9	Accommodation and food service activities	205	4,583	27	–	(13)	4,761	47
10	Information and communication	22	6,614	9	–	5	6,627	–
11	Real estate activities	831	30,216	51	–	(101)	30,996	29
12	Professional, scientific and technical activities	369	16,872	85	–	(26)	17,156	64
13	Administrative and support service activities	17	1,099	–	–	–	1,116	–
14	Public administration and defence, compulsory social security	–	262,093	–	–	–	262,093	–
15	Education	23	11,754	45	–	41	11,732	–
16	Human health services and social work activities	427	11,240	24	–	8	11,643	2
17	Arts, entertainment and recreation	51	3,613	7	–	(3)	3,657	–
18	Other services	6,881	410,123	4,512	–	132	412,493	2,266
19	Total	10,447	870,712	5,148	–	(45)	876,012	2,483

Key movements in total credit risk exposure by industry are shown in Table 32.

Specific credit risk adjustments and credit risk adjustment charges increased by £2.2bn and £2.4bn to £7.4bn and £2.4bn respectively, primarily driven by the implementation of IFRS9.

Risk and capital position review

Analysis of credit risk

Table 53a: CR1-B – Credit quality of exposures by industry or counterparty types for significant subsidiaries

Barclays Bank PLC		Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period ^a £m	Net values £m	Accumulated write-offs £m
As at 31 December 2018								
1	Agriculture, forestry and fishing	1	140	1	–	(66)	141	–
2	Mining and quarrying	203	12,175	49	–	(27)	12,329	10
3	Manufacturing	305	39,106	70	–	5	39,340	7
4	Electricity, gas, steam and air conditioning supply	15	14,383	23	–	16	14,375	–
5	Water supply	–	2,289	2	–	–	2,287	–
6	Construction	102	4,783	21	–	14	4,864	2
7	Wholesale and retail trade	220	16,308	139	–	28	16,389	1
8	Transport and storage	62	9,864	63	–	32	9,863	–
9	Accommodation and food service activities	58	3,990	15	–	5	4,032	1
10	Information and communication	2	6,385	10	–	3	6,376	11
11	Real estate activities	437	15,467	51	–	31	15,853	25
12	Professional, scientific and technical activities	292	16,924	100	–	41	17,117	20
13	Administrative and support service activities	–	952	–	–	–	952	–
14	Public administration and defence, compulsory social security	237	194,456	65	–	67	194,629	20
15	Education	5	3,584	2	–	2	3,587	–
16	Human health services and social work activities	127	10,064	28	–	11	10,163	12
17	Arts, entertainment and recreation	66	3,650	10	–	7	3,706	1
18	Other services	2,231	217,115	736	–	(2,278)	218,610	455
19	Total	4,362	571,632	1,385	–	(2,109)	574,609	565

Note

a Credit risk adjustments charges in the period reflect the impact of assets transferred from Barclays Bank PLC to Barclays Bank UK PLC on 1 April 2018 as part of the ring-fencing transfer scheme

Risk and capital position review

Analysis of credit risk

Table 53b: CR1-B – Credit quality of exposures by industry or counterparty types for significant subsidiaries

Barclays Bank UK PLC

As at 31 December 2018		Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period ^a £m	Net values £m	Accumulated write-offs £m
1	Agriculture, forestry and fishing	564	4,294	86	–	86	4,772	–
2	Mining and quarrying	21	3	–	–	–	24	6
3	Manufacturing	35	499	6	–	6	528	3
4	Electricity, gas, steam and air conditioning supply	3	36	–	–	–	38	–
5	Water supply	–	1	–	–	–	1	–
6	Construction	39	591	11	–	11	620	–
7	Wholesale and retail trade	161	1,428	20	–	20	1,569	–
8	Transport and storage	19	214	3	–	3	230	–
9	Accommodation and food service activities	124	693	8	–	8	809	–
10	Information and communication	3	35	1	–	1	37	–
11	Real estate activities	324	15,299	65	–	65	15,558	–
12	Professional, scientific and technical activities	93	963	11	–	11	1,045	–
13	Administrative and support service activities	–	104	–	–	–	104	–
14	Public administration and defence, compulsory social security	45	78,539	8	–	8	78,575	–
15	Education	19	6,783	22	–	22	6,779	–
16	Human health services and social work activities	91	1,205	21	–	21	1,275	12
17	Arts, entertainment and recreation	47	326	4	–	4	370	–
18	Other services	3,263	227,033	2,857	–	2,857	227,438	412
19	Total	4,851	338,045	3,123	–	3,123	339,774	433

Note

a Credit risk adjustments charges in the period reflect the impact of assets transferred from Barclays Bank PLC to Barclays Bank UK PLC on 1 April 2018 as part of the ring-fencing transfer scheme

Risk and capital position review

Analysis of credit risk

Table 54: CR1-C – Credit quality of exposures by geography

This table provides a comprehensive picture of the credit quality of the bank's on balance sheet and off balance sheet exposures by geography.

Barclays Group								
	Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period £m	Net values £m	Accumulated write-offs £m	
As at 31 December 2018								
UK	7,427	471,819	3,920	–	1,112	475,326	916	
Europe	1,802	147,800	908	–	235	148,695	98	
France	167	41,954	42	–	9	42,079	–	
Germany	239	38,890	269	–	102	38,860	98	
Italy	782	12,714	379	–	32	13,116	–	
Switzerland	103	19,113	16	–	11	19,201	–	
Asia	55	22,998	35	–	3	23,018	–	
Japan	–	10,936	–	–	–	10,935	–	
Americas	2,021	247,151	2,419	–	1,043	246,752	877	
United States	1,765	234,092	2,376	–	1,065	233,481	877	
Africa and Middle East	92	7,960	74	–	(31)	7,978	–	
Total	11,396	897,729	7,356	–	2,363	901,769	1,891	
As at 31 December 2017								
UK	6,808	445,888	2,808	–	112	449,888	905	
Europe	1,619	138,163	684	–	(204)	139,098	182	
France	189	26,543	33	–	(2)	26,699	–	
Germany	203	48,042	167	–	9	48,078	101	
Italy	825	12,179	358	–	(182)	12,646	8	
Luxembourg	53	6,214	19	–	4	6,247	7	
Switzerland	102	18,350	4	–	(4)	18,448	–	
Americas	1,442	254,455	1,377	–	61	254,520	1,305	
United States	1,213	243,004	1,310	–	54	242,906	1,298	
Asia	31	16,813	32	–	(69)	16,812	14	
Japan	–	6,413	1	–	–	6,412	–	
Africa and Middle East	547	15,393	247	–	55	15,694	77	
South Africa	367	9,146	138	–	9	9,374	65	
Total	10,447	870,712	5,148	–	(45)	876,012	2,483	

Key movements in total credit risk exposure by geography are shown in table 31.

Specific credit risk adjustments and credit risk adjustment charges increased by £2.2bn and £2.4bn to £7.4bn and £2.4bn respectively, primarily driven by the implementation of IFRS9.

Risk and capital position review

Analysis of credit risk

Table 54a: CR1-C – Credit quality of exposures by geography for significant subsidiaries

Barclays Bank PLC							
As at 31 December 2018	Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period ^a £m	Net values £m	Accumulated write-offs £m
UK	2,201	213,564	598	–	(2,073)	215,167	452
Europe	1,376	123,288	549	–	(53)	124,115	91
France	118	41,352	37	–	7	41,434	–
Germany	39	9,427	5	–	(162)	9,462	91
Italy	764	12,703	379	–	32	13,087	–
Switzerland	32	20,006	11	–	11	20,027	–
Asia	54	25,669	35	–	3	25,689	–
Japan	–	12,394	–	–	–	12,393	–
Americas	643	203,191	131	–	40	203,703	22
United States	422	151,121	89	–	62	151,454	22
Africa and Middle East	87	5,920	73	–	(26)	5,935	–
Total	4,362	571,632	1,385	–	(2,109)	574,609	565

Table 54b: CR1-C – Credit quality of exposures by geography for significant subsidiaries

Barclays Bank UK PLC							
As at 31 December 2018	Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period ^a £m	Net values £m	Accumulated write-offs £m
UK	4,836	317,328	3,120	–	3,120	319,044	433
Europe	6	17,305	1	–	1	17,309	–
Germany	1	16,221	–	–	–	16,221	–
Asia	–	34	–	–	–	34	–
Americas	4	3,307	1	–	1	3,311	–
United States	–	3,202	–	–	–	3,202	–
Africa and Middle East	5	72	1	–	1	76	–
Total	4,851	338,045	3,123	–	3,123	339,774	433

Note

a Credit risk adjustments charges in the period reflect the impact of assets transferred from Barclays Bank PLC to Barclays Bank UK PLC on 1 April 2018 as part of the ring-fencing transfer scheme

Risk and capital position review

Analysis of credit risk

Table 55: CR1-D – Ageing of past-due exposures

This table provides the ageing analysis of accounting on-balance sheet past due exposures regardless of their impairment status.

		Gross carrying values					
		≤ 30 days £m	> 30 days ≤ 60 days £m	> 60 days ≤ 90 days £m	> 90 days ≤ 180 days £m	>180 days ≤ 1 year £m	> 1 year £m
As at 31 December 2018							
1	Loans	8,425	1,320	1,187	1,405	3,042	1,627
2	Debt Securities	–	–	–	–	2	–
3	Total Exposures	8,425	1,320	1,187	1,405	3,044	1,627
As at 31 December 2017							
1	Loans	11,365	1,171	661	1,114	2,183	1,557
2	Debt Securities	–	–	–	–	–	11
3	Total Exposures	11,365	1,171	661	1,114	2,183	1,568

The carrying value of defaulted exposure decreased £1.1bn to £17.0bn. This includes £3.0bn decrease in loans due less than 30 days, partly offset by £1.2bn increase in loans past due more than 90 days. All balances past due more than 90 days, except for £0.2bn of mortgages, are stage 3 credit impaired.

Table 56: CR1-E – Non-performing and forborne exposures

This table provides an overview of non-performing and forborne exposures.

	Gross carrying amount of performing and non-performing exposures							Accumulated impairment and provisions and negative fair value adjustments due to credit risk				Collaterals and financial guarantees received	
	Total £m	Of which performing but past due > 30 days and ≤ 90 days £m	Of which performing forborne £m	Of which non-performing				On performing exposures		On non-performing exposures		On non- performing exposures £m	Of which forborne exposures £m
				Total £m	Of which defaulted £m	Of which impaired £m	Of which forborne £m	Total £m	Of which forborne £m	Total £m	Of which forborne £m		
As at 31 December 2018													
010 Debt securities	61,145	–	–	3	3	–	–	11	–	–	–	–	–
020 Loans and advances ^a	717,346	1,679	1,030	8,838	8,772	8,581	2,970	3,435	44	3,409	614	3,224	1,443
030 Off-balance-sheet exposures	368,335	–	419	685	266	–	24	249	–	22	–	31	22
As at 31 December 2017^b													
010 Debt securities	58,313	–	–	17	11	15	–	–	–	11	–	–	–
020 Loans and advances ^a	691,030	1,750	1,078	6,258	5,192	5,946	3,118	1,690	58	3,021	815	2,076	1,952
030 Off-balance-sheet exposures	309,303	–	518	1,531	1,531	–	14	54	–	25	–	8	35

Note:

a This includes cash at central banks and financial assets designated at fair value.

b Prior year information has been revised to improve comparability with current year IFRS 9 based disclosures.

Risk and capital position review

Analysis of credit risk

Table 57: CR2-B – Changes in the stock of defaulted and impaired loans and debt securities

This table provides an overview of the Bank's stock of defaulted and impaired loans and debt securities

	Gross carrying value defaulted exposures ^a £m
1 As at 1 January 2018^b	9,231
2 Loans and debt securities that have defaulted or impaired since the last reporting period	4,023
3 Returned to non-defaulted status	(1,432)
4 Amounts written off	(1,891)
5 Other changes ^c	(1,156)
10 As at 31 December 2018	8,775

Note

a Defaulted exposures are defined as all stage 3 impaired gross loans and debt securities under IFRS9 and any stage 1 and stage 2 gross loans and debt securities under IFRS9 more than 90 days past due

b The opening balance as at 01.01.18 reflects the alignment of the definition of loans and debt securities in default to that used for IFRS 9 reporting purposes

c Other changes include repayments and disposals, net drawdowns

Table 58: CR2-A – Changes in the stock of general and specific credit risk adjustments

This table shows the movement in the impairment allowance between 2017 and 2018 year-end. Please refer to pages 147 to 150 of this document and Note 7 of the 2018 Annual Report for further information on impairment.

	Accumulated specific credit risk adjustment £m	Accumulated general credit risk adjustment £m
1 As at 1 January 2018^a	7,640	–
2 Increases due to amounts set aside for estimated loan losses during the period ^b	1,259	–
3 Decreases due to amounts reversed for estimated loan losses during the period ^c	(1,916)	–
4 Decreases due to amounts taken against accumulated credit risk adjustments	–	–
5 Transfers between credit risk adjustments	–	–
6 Impact of exchange rate differences	144	–
7 Business combinations, including acquisitions and disposals of subsidiaries	–	–
9 Other adjustments	–	–
10 As at 31 December 2018	7,127	–
11 Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	(195)	–
12 Specific credit risk adjustments directly recorded to the statement of profit or loss	–	–

Note

a Impairments are calculated on a regulatory consolidation basis and the opening balance reflects the impact of the adoption of IFRS 9 from 01.01.18

b Increases due to amounts set aside for estimated loan losses during the period includes the net impact of changes made to parameters (such as probability of default, exposure at default and loss given default), changes in macro economic variables, new assets originated, repayments and drawdowns

c Represents amounts written off

Analysis of credit risk

Regulatory adjustments to statutory Impairment

The IFRS impairment allowance is adjusted to reflect a regulatory view, which is used to calculate the provision misalignment adjustment to regulatory capital. The primary differences are detailed below:

- Scope of consolidation – adjustments driven by differences between the IFRS and regulatory consolidation, as highlighted on page 11. These include, but are not exclusive to associates and impairments relating to securitisation vehicles.
- Securitisation positions – expected loss is not calculated for securitisation positions. As such, impairments associated with these positions are removed from the regulatory view
- Other regulatory adjustments – adjustments driven by differences between the IFRS and regulatory requirements.

Table 59: Regulatory adjustments to statutory Impairment

As at 31 December 2018	£m
IFRS allowance for impairment	7,041
Regulatory adjustments	–
Scope of consolidation	87
Other regulatory adjustments	230
Regulatory impairment allowance	7,358

Risk and capital position review

Analysis of credit risk

Loss analysis – regulatory expected loss (EL) versus actual losses

The following table compares Barclays regulatory expected loss (EL) measure against the view of actual loss for those portfolios where credit risk is calculated using the IRB approach.

As expected loss best estimate (ELBE) represents a charge for assets already in default, it has been separately disclosed from total EL. This facilitates comparison of actual loss during the period to the expectation of future loss or EL, as derived by our IRB models in the prior period.

The following should be considered when comparing EL and actual loss metrics:

- The purpose of EL is not to represent a prediction of future impairment charges
- Whilst the impairment charge and the EL measure respond to similar drivers, they are not directly comparable
- The EL does not reflect growth of portfolios or changes in the mix of exposures. In forecasting and calculating impairment, balances and trends in the cash flow behaviour of customer accounts are considered.

It should be noted that Barclays' EL models and regulatory estimations present a conservative view compared to actual loss.

Regulatory Expected Loss

EL is an input to the capital adequacy calculation which can be seen as an expectation of average future loss based on IRB models over a one year period as follows:

- Non-defaulted assets: EL is calculated using probability of default, downturn loss given default estimates and exposures at default.
- Defaulted assets: EL is based upon an estimate of likely recovery levels for each asset and is generally referred to as ELBE.

Actual Loss

Actual loss where subject to the IRB approach is the amount charged against profit.

Table 60: Analysis of expected loss versus actual losses for IRB exposures

IRB Exposure Class	EL	ELBE	Total expected loss at 31 December 2017	Total actual loss at 31 December 2018
	£m	£m	£m	£m
Central governments or central banks	10	–	10	1
Institutions	32	15	48	7
Corporates	470	580	1,049	(122)
Retail				
– SME	178	105	283	18
– Secured by real estate collateral	377	326	703	15
– Qualifying revolving retail	840	758	1,600	910
– Other retail	205	257	462	113
Equity	–	–	–	–
Securitisation positions	–	–	–	4
Non-credit obligation assets	–	–	–	–
Total IRB	2,113	2,041	4,155	946
			Total expected loss at 31 December 2016	Total actual loss at 31 December 2017
	EL	ELBE	£m	£m
Central governments or central banks	13	–	13	–
Institutions	19	9	28	1
Corporates	466	547	1,012	167
Retail				
– SME	129	66	195	22
– Secured by real estate collateral	350	278	628	64
– Qualifying revolving retail	791	781	1,572	634
– Other retail	226	226	452	211
Equity	–	–	–	–
Securitisation positions	–	–	–	–
Non-credit obligation assets	–	–	–	–
Total IRB	1,994	1,907	3,901	1,099

The expected loss and actual loss remained broadly stable.

Analysis of credit risk

Non-trading book equity investments

The holding of non-trading book equity positions is primarily related to the holding of investments by the Private Equity business.

Table 61: Fair value of and gains and losses on equity investments

This table shows the fair value of non trading book equity positions subject to credit risk calculations, plus associated gains and losses.

Non trading book equity positions	As at 31 December 2018		As at 31 December 2017	
	Fair Value £m	RWAs £m	Fair Value £m	RWAs £m
Exchange Traded	1,590	3,510	446	670
Private Equity	1,138	1,774	823	1,375
Other	–	–	–	–
Total	2,728	5,284	1,269	2,045
Realised gains/(losses) from sale and liquidations of equity investments	114	–	(35)	–
Unrealised gains	501	–	512	–
Unrealised gains included in PRA transitional CET1 Capital	501	–	512	–

PRA agreed to full deconsolidation of BAGL for regulatory reporting effective 30 June 2018. Prior to this, Barclays had been applying proportional consolidation for regulatory purposes since 30 June 2017. As at 31 December 2018, Barclays' shareholding in BAGL of 14.9% is treated as a banking book equity with a 250% risk weight.

Analysis of counterparty credit risk

This section details Barclays' counterparty credit risk profile, focusing on regulatory measures such as exposure at default and risk weighted assets. The risk profile is analysed by business segment, financial contract type, approach and notional value.

- Counterparty credit risk (CCR) RWAs are primarily generated by the following IFRS account classifications: financial assets designated at fair value; derivative financial instruments; reverse repurchase agreements and other similar secured lending.
- CVA has been included as part of the CCR RWAs disclosures.

Risk weighted assets for counterparty credit risk decreased in the year.

–£9.3bn

Total RWA

Driven by:

–£5.1bn

Driven by the extended regulatory permission to use the Internal Model Method

–£1.0bn

Driven by change in the regulatory treatment for assets associated with high risk

Analysis of counterparty credit risk

Counterparty risk exposures

Counterparty credit risk (CCR) is the risk related to a counterparty defaulting before the final settlement of a transaction's cash flows. Barclays calculates CCR using three methods: Internal Model Method (IMM), Financial Collateral Comprehensive Method (FCCM), and Mark to Market Method (MTM).

The following tables analyse counterparty credit risk exposures and risk weighted assets

Table 62: Exposure at default associated with counterparty credit risk by business

This table summarises EAD post-credit risk mitigation by business and exposure class for counterparty credit risk.

It should be noted that the disclosure below excludes CVA which is shown separately in Table 75.

Post-CRM EAD				
As at 31 December 2018	Barclays UK £m	Barclays International £m	Head Office £m	Total £m
Counterparty credit risk exposure class				
Standardised approach				
Central governments or central banks	17	2,840	–	2,857
Regional governments or local authorities	–	318	–	318
Public sector entities	–	1,337	–	1,337
Multilateral development banks	–	601	–	601
International organisations	–	98	–	98
Institutions	45	264	–	309
Corporates	563	22,974	3	23,540
Retail	–	–	–	–
Secured by mortgages	–	–	–	–
Exposures in default	–	–	–	–
Items associated with high risk	–	–	–	–
Covered bonds	–	–	–	–
Securitisation positions	–	–	–	–
Collective investment undertakings	–	–	–	–
Equity positions	–	–	–	–
Other items	–	–	–	–
Total Standardised Approach Credit Risk Exposure	625	28,432	3	29,060
Advanced IRB approach				
Central governments or central banks	–	6,488	–	6,488
Institutions	–	21,605	11	21,616
Corporates	–	37,271	23	37,294
Retail	–	–	–	–
– Small and medium enterprises (SME)	–	–	–	–
– Secured by real estate collateral	–	–	–	–
– Qualifying revolving retail	–	–	–	–
– Other retail	–	–	–	–
Equity	–	–	–	–
Securitisation positions	–	179	–	179
Non-credit obligation assets	–	–	–	–
Total Advanced IRB Credit Risk Exposure	–	65,543	34	65,577
Default fund contributions	94	1,395	–	1,489
Total Counterparty Credit Risk	719	95,370	37	96,126

Analysis of counterparty credit risk

Table 62: Exposure at default associated with counterparty credit risk by business continued

Post-CRM EAD				
As at 31 December 2017	Barclays UK £m	Barclays International £m	Head Office £m	Total £m
Counterparty credit risk exposure class				
Standardised approach				
Central governments or central banks	–	4,597	–	4,597
Regional governments or local authorities	–	203	–	203
Public sector entities	–	869	–	869
Multilateral development banks	–	362	–	362
International organisations	–	42	–	42
Institutions	–	108	17	125
Corporates	–	28,338	134	28,472
Retail	–	–	–	–
Secured by mortgages	–	–	–	–
Exposures in default	–	–	–	–
Items associated with high risk	–	1,453	–	1,453
Covered bonds	–	–	–	–
Securitisation positions	–	–	–	–
Collective investment undertakings	–	–	–	–
Equity positions	–	–	–	–
Other items	–	–	–	–
Total Standardised Approach Credit Risk Exposure	–	35,972	151	36,123
Advanced IRB approach				
Central governments or central banks	–	8,397	–	8,397
Institutions	–	19,861	925	20,786
Corporates	–	41,483	536	42,019
Retail	–	–	–	–
– Small and medium enterprises (SME)	–	–	–	–
– Secured by real estate collateral	–	–	–	–
– Qualifying revolving retail	–	–	–	–
– Other retail	–	–	–	–
Equity	–	–	–	–
Securitisation positions	–	194	–	194
Non-credit obligation assets	–	–	–	–
Total Advanced IRB Credit Risk Exposure	–	69,935	1,461	71,396
Default fund contributions	–	1,881	79	1,960
Total Counterparty Credit Risk	–	107,788	1,691	109,479

Counterparty credit risk exposure post-CRM decreased £13.4bn to £96.1bn, primarily due to:

- Barclays International decreased £12.4bn to £95.4bn primarily driven by an extended regulatory permission to use the Internal Model Method
- Head Office decreased £1.7bn to nil primarily due to the regulatory deconsolidation of BAGL

Analysis of counterparty credit risk

Table 63: Risk weighted assets of counterparty credit risk exposures by business units

This table summarises risk weighted assets by business and exposure class for counterparty credit risk.

The disclosure below excludes CVA which is shown separately on Table 75.

Risk weighted assets credit exposure class	Barclays UK £m	Barclays International £m	Head Office £m	Total £m	Capital requirements £m
As at 31 December 2018					
Counterparty Credit risk exposure class					
Standardised approach					
Central governments or central banks	–	13	–	13	1
Regional governments or local authorities	–	2	–	2	–
Public sector entities	–	106	–	106	8
Multilateral development banks	–	–	–	–	–
International organisations	–	–	–	–	–
Institutions	12	148	–	160	13
Corporates	12	9,038	7	9,057	725
Retail	–	–	–	–	–
Secured by mortgages	–	–	–	–	–
Exposures in default	–	–	–	–	–
Items associated with high risks	–	–	–	–	–
Covered bonds	–	–	–	–	–
Securitisation positions	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–
Equity positions	–	–	–	–	–
Other items	–	–	–	–	–
Total standardised approach credit risk exposure	24	9,307	7	9,338	747
Advanced IRB approach					
Central governments or central banks	–	716	–	716	57
Institutions	–	5,316	2	5,318	425
Corporates	–	8,894	11	8,905	712
Retail	–	–	–	–	–
– Small and medium-sized enterprises (SMEs)	–	–	–	–	–
– Secured by real estate collateral	–	–	–	–	–
– Qualifying revolving retail	–	–	–	–	–
– Other retail	–	–	–	–	–
Equity	–	–	–	–	–
Securitisation positions	–	123	–	123	10
Non-credit obligation assets	–	–	–	–	–
Total advanced IRB credit risk exposure	–	15,049	13	15,062	1,205
Default fund contributions	205	750	–	955	76
Total Counterparty credit risk weighted assets	229	25,106	20	25,355	2,028

Analysis of counterparty credit risk

Table 63: Detailed view of counterparty credit risk RWAs and Capital Requirement continued

Risk weighted assets credit exposure class	Barclays UK £m	Barclays International £m	Head Office £m	Total £m	Capital requirements £m
As at 31 December 2017					
Credit risk					
Standardised approach					
Central governments or central banks	–	3	–	3	–
Regional governments or local authorities	–	1	–	1	–
Public sector entities	–	99	–	99	8
Multilateral development banks	–	–	–	–	–
International organisations	–	–	–	–	–
Institutions	–	53	4	57	5
Corporates	–	13,620	10	13,630	1,090
Retail	–	–	–	–	–
Secured by mortgages	–	–	–	–	–
Exposures in default	–	1	–	1	–
Items associated with high risk	–	2,114	–	2,114	169
Covered bonds	–	–	–	–	–
Securitisation positions	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–
Equity positions	–	–	–	–	–
Other items	–	–	–	–	–
Total standardised approach credit risk exposure	–	15,891	14	15,905	1,272
Advanced IRB approach					
Central governments or central banks	–	1,299	–	1,299	104
Institutions	–	5,548	283	5,831	466
Corporates	–	10,296	350	10,646	852
Retail	–	–	–	–	–
– Small and medium-sized enterprises (SMEs)	–	–	–	–	–
– Secured by real estate collateral	–	–	–	–	–
– Qualifying revolving retail	–	–	–	–	–
– Other retail	–	–	–	–	–
Equity	–	–	–	–	–
Securitisation positions	–	100	–	100	8
Non-credit obligation assets	–	–	–	–	–
Total advanced IRB credit risk exposure	–	17,243	633	17,876	1,430
Default fund contributions	–	1,210	51	1,261	101
Total Counterparty credit risk weighted assets	–	34,344	698	35,042	2,803

Counterparty credit risk RWAs decreased £9.7bn to £25.4bn:

- Barclays International decreased £9.2bn to £25.1 primarily driven by an extended regulatory permission to use the Internal Model Method
- Head Office decreased £0.7bn to nil primarily due to the regulatory deconsolidation of BAGL

Analysis of counterparty credit risk

Table 63a: Detailed view of counterparty credit risk RWAs and Capital Requirement by significant subsidiaries

As at 31 December 2018	Barclays Bank PLC		Barclays Bank UK PLC	
	RWA £m	Capital requirements £m	RWA £m	Capital requirements £m
Standardised approach				
Central governments or central banks	11	1	–	–
Regional governments or local authorities	2	–	–	–
Public sector entities	105	8	–	–
Multilateral development banks	–	–	–	–
International organisations	–	–	–	–
Institutions	1,125	90	41	3
Corporates	6,452	516	12	1
Retail	–	–	–	–
Secured by mortgages	–	–	–	–
Exposures in default	–	–	–	–
Items associated with high risks	–	–	–	–
Covered bonds	–	–	–	–
Securitisation positions	–	–	–	–
Collective investment undertakings	–	–	–	–
Equity positions	–	–	–	–
Other items	–	–	–	–
Total standardised approach credit risk exposure	7,695	615	53	4
Advanced IRB approach				
Central governments or central banks	654	52	–	–
Institutions	4,591	367	–	–
Corporates	7,981	639	–	–
Retail	–	–	–	–
– Small and medium-sized enterprises (SMEs)	–	–	–	–
– Secured by real estate collateral	–	–	–	–
– Qualifying revolving retail	–	–	–	–
– Other retail	–	–	–	–
Equity	–	–	–	–
Securitisation positions	123	10	–	–
Non-credit obligation assets	–	–	–	–
Total advanced IRB credit risk exposure	13,349	1,068	–	–
Default fund contributions	546	44	213	17
Total Counterparty credit risk weighted assets	21,590	1,727	266	21

Analysis of counterparty credit risk

Table 64: CCR1 – Analysis of CCR exposure by approach

This table provides the comprehensive view of the methods used by Barclays to calculate CCR regulatory requirements and the main parameters used within each method.

As at 31 December 2018		Notional £m	Replacement cost/current market value £m	Potential future credit exposure £m	EEPE £m	Multiplier £m	EAD post CRM £m	RWAs £m
1	Mark to market		3,127	9,405			6,125	2,321
2	Original exposure	–					–	–
3	Standardised approach		–				–	–
4	IMM (for derivatives and SFTs)				54,622	1.4	76,471	18,792
5	Of which securities financing transactions				18,152	1.4	25,413	4,376
6	Of which derivatives and long settlement transactions				36,470	1.4	51,058	14,416
7	Of which from contractual cross-product netting				–		–	–
8	Financial collateral simple method (for SFTs)						–	–
9	Financial collateral comprehensive method (for SFTs)						12,252	3,287
10	VaR for SFTs						–	–
11	Total							24,400

As at 31 December 2017		Notional £m	Replacement cost/current market value £m	Potential future credit exposure £m	EEPE £m	Multiplier £m	EAD post CRM £m	RWAs £m
1	Mark to market		3,328	9,186			6,567	2,613
2	Original exposure	–					–	–
3	Standardised approach		–				–	–
4	IMM (for derivatives and SFTs)				59,853	1.4	83,794	21,400
5	Of which securities financing transactions				22,819	1.4	31,947	5,180
6	Of which derivatives and long settlement transactions				37,034	1.4	51,848	16,220
7	Of which from contractual cross-product netting				–		–	–
8	Financial collateral simple method (for SFTs)						–	–
9	Financial collateral comprehensive method (for SFTs)						17,153	9,768
10	VaR for SFTs						–	–
11	Total							33,781

Counterparty credit risk RWAs decreased £9.4bn to £24.4bn, this was driven by:

- FCCM – SFTs RWAs decreased £6.5bn to £3.3bn primarily due to an extended regulatory permission to use the Internal Model Method
- IMM – derivative RWAs decreased £1.8bn to £14.4bn primarily driven by improved book quality and a transfer of exposures from items associated with particularly high risk to corporates

Analysis of counterparty credit risk

Table 65: CCR3 Counterparty credit risk exposures by exposure classes and risk weight under standardised approach

This table shows exposure at default, broken down by exposure class and risk weight. This table includes exposures subject to the Standardised approach only.

Exposures by regulatory portfolio and risk

	0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1250%	Others	Deducted	Total	of which: Unrated	
As at 31 December 2018																			
1 Central governments or central banks	2,843	-	-	-	-	-	2	-	-	12	-	-	-	-	-	-	2,857	245	
2 Regional governments or local authorities	314	-	-	-	3	-	-	-	-	2	-	-	-	-	-	-	319	27	
3 Public sector entities	350	526	-	-	458	-	-	-	-	3	-	-	-	-	-	-	1,337	990	
4 Multilateral development banks	601	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	601	-	
5 International Organisations	98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98	39	
6 Institutions	-	-	-	-	230	-	34	-	-	42	2	-	-	-	-	-	308	226	
7 Corporates	-	14,675	-	-	46	-	54	-	-	8,751	14	-	-	-	-	-	23,540	20,578	
8 Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9 Secured by mortgages on immovable property	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10 Exposures in default	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11 Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12 Covered Bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13 Claims on institutions and corporate with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14 Claims in the form of CIU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15 Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16 Other items	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17 Total	4,206	15,201	-	-	737	-	90	-	-	8,810	16	-	-	-	-	-	29,060	22,105	

Analysis of counterparty credit risk

Table 65: CCR3 Counterparty credit risk exposures by exposure classes and risk weight under standardised approach continued

Exposures by regulatory portfolio and risk

	0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1250%	Others	Deducted	Total	of which: Unrated	
As at 31 December 2017																			
1 Central governments or central banks	4,594	-	-	-	-	-	2	-	-	1	-	-	-	-	-	-	4,597	1,392	
2 Regional governments or local authorities	198	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	203	203	
3 Public sector entities	362	56	-	-	444	-	-	-	-	7	-	-	-	-	-	-	869	869	
4 Multilateral development banks	362	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	362	362	
5 International Organisations	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	42	
6 Institutions	-	-	-	-	93	-	1	-	-	31	-	-	-	-	-	-	125	85	
7 Corporates	-	15,045	-	-	48	-	12	-	-	13,362	5	-	-	-	-	-	28,472	25,883	
8 Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9 Secured by mortgages on immovable property	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10 Exposures in default	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11 Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	1,453	-	-	-	-	-	1,453	1,453	
12 Covered Bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13 Claims on institutions and corporate with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14 Claims in the form of CIU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15 Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16 Other items	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17 Total	5,558	15,101	-	-	590	-	15	-	-	13,401	1,458	-	-	-	-	-	36,123	30,288	

Standardised counterparty credit risk exposures decreased by £7.1bn to £29.1bn, primarily driven by:

- 0% risk weighted exposures to central governments or central bank decreased £1.8bn to £2.8bn primarily driven by a decrease in SFT exposures
- 100% risk weighted exposures to Corporates decreased £4.6bn to £8.8bn primarily driven by an extended regulatory permission to use the Internal Model Method
- 150% risk weighted exposures to item associated with particularly high risk decreased £1.5bn primarily driven by a transfer of exposures from items associated with particularly high risk to corporates

Analysis of counterparty credit risk

IRB obligor grade disclosure

The following tables show counterparty credit risk exposure at default post-CRM for the advanced IRB approach for portfolios within both the trading and banking books. Separate tables are provided for the following exposure classes: central governments and central banks (Table 66), institutions (Table 67), corporates (Table 68) and corporates subject to slotting (Table 69).

Table 66: CCR4 Counterparty credit risk exposures by portfolio and PD range for central governments and central banks

	EAD post CRM £m	Average PD %	Number of obligors	Average LGD %	Average Maturity	RWA £m	RWA Density %	Expected Loss £m	Value Adjustment and Provisions £m
As at 31 December 2018									
0.00 to < 0.15	6,320	0.0%	54	63.6%	–	601	9.5%	2	–
0.15 to < 0.25	53	0.2%	8	49.5%	1	22	41.1%	–	–
0.25 to < 0.50	29	0.3%	5	57.6%	–	11	39.7%	–	–
0.50 to < 0.75	4	0.7%	3	55.5%	4	5	143.6%	–	–
0.75 to < 2.50	76	1.6%	1	45.0%	–	64	84.6%	1	–
2.50 to < 10.00	6	6.3%	4	62.8%	1	13	226.1%	–	–
10.00 to < 100.00	–	0.0%	–	0.0%	–	–	–	–	–
100.00 (Default)	–	0.0%	–	0.0%	–	–	–	–	–
Total	6,488	0.1%	75	63.3%	–	716	11.0%	3	–
As at 31 December 2017									
0.00 to < 0.15	8,201	0.1%	60	62.6%	–	1,100	13.4%	3	–
0.15 to < 0.25	16	0.2%	3	48.0%	–	3	20.7%	–	–
0.25 to < 0.50	128	0.3%	11	52.9%	1	68	52.9%	–	–
0.50 to < 0.75	–	0.6%	2	45.0%	1	–	61.2%	–	–
0.75 to < 2.50	7	0.8%	3	58.1%	5	11	161.8%	–	–
2.50 to < 10.00	45	8.8%	4	63.0%	1	117	257.2%	3	–
10.00 to < 100.00	–	0.0%	–	0.0%	–	–	–	–	–
100.00 (Default)	–	0.0%	–	0.0%	–	–	–	–	–
Total	8,397	0.1%	83	62.4%	1	1,299	15.5%	6	–

The exposure weighted average risk weight associated with advanced IRB exposures to central governments and central banks decreased by 4.5% to 11.0%, primarily driven by a decrease in SFT exposures.

Analysis of counterparty credit risk

Table 67: CCR4 Counterparty credit risk exposures by portfolio and PD range for institutions

	EAD post CRM £m	Average PD %	Number of obligors	Average LGD %	Average Maturity	RWA £m	RWA Density %	Expected Loss £m	Value Adjustment and Provisions £m
As at 31 December 2018									
0.00 to < 0.15	19,850	0.1%	671	46.0%	2	4,342	21.9%	6	–
0.15 to < 0.25	1,034	0.2%	119	48.4%	1	408	39.4%	2	–
0.25 to < 0.50	449	0.4%	104	48.7%	1	295	65.6%	1	–
0.50 to < 0.75	59	0.6%	27	45.1%	1	38	64.8%	–	–
0.75 to < 2.50	155	1.7%	83	47.3%	1	167	107.9%	1	–
2.50 to < 10.00	49	4.1%	81	46.6%	1	62	125.2%	1	–
10.00 to < 100.00	20	13.8%	8	5.9%	1	6	30.4%	–	–
100.00 (Default)	–	0.0%	–	0.0%	–	–	–	–	–
Total	21,616	0.1%	1,093	46.2%	2	5,318	24.6%	11	–
As at 31 December 2017									
0.00 to < 0.15	18,497	0.1%	726	46.3%	2	4,283	23.2%	5	–
0.15 to < 0.25	1,076	0.2%	158	45.1%	2	511	47.5%	1	–
0.25 to < 0.50	493	0.4%	135	50.7%	1	299	60.7%	1	–
0.50 to < 0.75	166	0.6%	42	46.0%	1	100	60.2%	–	–
0.75 to < 2.50	419	1.6%	105	48.3%	1	435	103.9%	4	–
2.50 to < 10.00	90	3.8%	91	48.5%	1	113	124.6%	1	–
10.00 to < 100.00	45	15.0%	17	43.3%	1	90	198.3%	3	–
100.00 (Default)	–	0.00%	–	0.00%	–	–	–	–	–
Total	20,786	0.2%	1,274	46.4%	2	5,831	28.1%	15	–

The exposure weighted average risk weight associated with advanced IRB exposures to institutions decreased 3.5% to 24.6%. This was primarily driven by an increase in exposures in higher quality default grades.

Analysis of counterparty credit risk

Table 68: CCR4 Counterparty credit risk exposures by portfolio and PD range for corporates

	EAD post CRM £m	Average PD %	Number of obligors	Average LGD %	Average Maturity	RWA £m	RWA Density %	Expected Loss £m	Value Adjustment and Provisions £m
As at 31 December 2018									
0.00 to < 0.15	32,359	0.0%	5,798	44.8%	2	5,414	16.7%	7	–
0.15 to < 0.25	1,995	0.2%	632	44.0%	2	856	42.9%	2	–
0.25 to < 0.50	917	0.4%	423	45.9%	3	678	73.9%	1	–
0.50 to < 0.75	292	0.6%	92	42.9%	2	203	69.3%	1	–
0.75 to < 2.50	605	1.5%	233	37.4%	3	579	95.7%	3	–
2.50 to < 10.00	708	4.5%	177	35.0%	3	829	117.0%	11	–
10.00 to < 100.00	52	12.7%	30	40.7%	2	84	162.2%	2	–
100.00 (Default)	8	100.0%	39	41.4%	2	10	127.2%	–	–
Total	36,936	0.2%	7,424	44.5%	2	8,653	23.4%	27	–
As at 31 December 2017									
0.00 to < 0.15	34,917	0.1%	5,737	45.0%	1	5,832	16.7%	8	–
0.15 to < 0.25	3,239	0.2%	941	43.9%	2	1,324	40.9%	2	–
0.25 to < 0.50	1,086	0.4%	587	49.1%	3	824	75.9%	2	–
0.50 to < 0.75	344	0.6%	167	40.1%	3	231	67.1%	1	–
0.75 to < 2.50	940	1.6%	743	41.7%	3	941	100.0%	5	–
2.50 to < 10.00	850	4.7%	310	37.7%	3	990	116.5%	13	–
10.00 to < 100.00	71	15.5%	70	36.1%	3	95	133.8%	2	–
100.00 (Default)	6	100.0%	35	43.4%	2	13	213.3%	–	–
Total	41,453	0.2%	8,590	44.8%	2	10,250	24.7%	33	–

The exposure weighted average risk weight associated with IRB exposure to corporates decreased 1.3% to 23.4%, this was primarily driven by a decrease in SFT exposures.

Analysis of counterparty credit risk

Table 69: Counterparty Credit risk – Corporates specialised lending IRB

Barclays Group			On-balance sheet amount £m	Off-balance sheet amount £m	Risk weight %	Exposure amount £m	RWA £m	Expected losses £m
Regulatory categories		Remaining maturity						
As at 31 December 2018								
Category 1	Strong	Less than 2.5 years	–	–	50%	15	7	–
		Equal to or more than 2.5 years	–	–	70%	40	28	–
Category 2	Good	Less than 2.5 years	–	–	70%	280	196	1
		Equal to or more than 2.5 years	–	–	90%	15	13	–
Category 3	Satisfactory	Less than 2.5 years	–	–	115%	3	3	–
		Equal to or more than 2.5 years	–	–	115%	3	3	–
Category 4	Weak	Less than 2.5 years	–	–	250%	–	–	–
		Equal to or more than 2.5 years	–	–	250%	–	–	–
Category 5	Default	Less than 2.5 years	–	–	0%	2	–	1
		Equal to or more than 2.5 years	–	–	0%	–	–	–
Total		Less than 2.5 years	–	–	–	300	206	2
		Equal to or more than 2.5 years	–	–	–	58	44	–
As at 31 December 2017								
Category 1	Strong	Less than 2.5 years	–	–	50%	34	17	–
		Equal to or more than 2.5 years	–	–	70%	443	310	2
Category 2	Good	Less than 2.5 years	–	–	70%	47	33	–
		Equal to or more than 2.5 years	–	–	90%	30	27	–
Category 3	Satisfactory	Less than 2.5 years	–	–	115%	4	4	–
		Equal to or more than 2.5 years	–	–	115%	4	5	–
Category 4	Weak	Less than 2.5 years	–	–	250%	–	–	–
		Equal to or more than 2.5 years	–	–	250%	–	–	–
Category 5	Default	Less than 2.5 years	–	–	0%	4	–	2
		Equal to or more than 2.5 years	–	–	0%	–	–	–
Total		Less than 2.5 years	–	–	–	89	54	2
		Equal to or more than 2.5 years	–	–	–	477	342	2

The overall exposures related to specialised lending IRB approach remained broadly stable at £0.4bn (2018: £0.6bn).

Analysis of counterparty credit risk

Table 69a: CR10 – Corporate exposures subject to specialised lending IRB for significant subsidiaries

Barclays Bank PLC			On-balance sheet amount £m	Off-balance sheet amount £m	Risk weight %	Exposure amount £m	RWA £m	Expected losses £m
Regulatory categories	Remaining maturity							
As at 31 December 2018								
Category 1	Strong	Less than 2.5 years	–	–	50%	15	7	–
		Equal to or more than 2.5 years	–	–	70%	40	28	–
Category 2	Good	Less than 2.5 years	–	–	70%	280	197	1
		Equal to or more than 2.5 years	–	–	90%	15	13	–
Category 3	Satisfactory	Less than 2.5 years	–	–	115%	3	3	–
		Equal to or more than 2.5 years	–	–	115%	3	3	–
Category 4	Weak	Less than 2.5 years	–	–	250%	–	–	–
		Equal to or more than 2.5 years	–	–	250%	–	–	–
Category 5	Default	Less than 2.5 years	–	–	0%	2	–	1
		Equal to or more than 2.5 years	–	–	0%	–	–	–
Total		Less than 2.5 years	–	–	–	300	206	2
		Equal to or more than 2.5 years	–	–	–	58	44	–

Table 69b: CR10 – Corporate exposures subject to specialised lending IRB for significant subsidiaries

Barclays Bank UK PLC			On-balance sheet amount £m	Off-balance sheet amount £m	Risk weight %	Exposure amount £m	RWA £m	Expected losses £m
Regulatory categories	Remaining maturity							
As at 31 December 2018								
Category 1	Strong	Less than 2.5 years	–	–	50%	–	–	–
		Equal to or more than 2.5 years	–	–	70%	–	–	–
Category 2	Good	Less than 2.5 years	–	–	70%	–	–	–
		Equal to or more than 2.5 years	–	–	90%	–	–	–
Category 3	Satisfactory	Less than 2.5 years	–	–	115%	–	–	–
		Equal to or more than 2.5 years	–	–	115%	–	–	–
Category 4	Weak	Less than 2.5 years	–	–	250%	–	–	–
		Equal to or more than 2.5 years	–	–	250%	–	–	–
Category 5	Default	Less than 2.5 years	–	–	0%	–	–	–
		Equal to or more than 2.5 years	–	–	0%	–	–	–
Total		Less than 2.5 years	–	–	–	–	–	–
		Equal to or more than 2.5 years	–	–	–	–	–	–

Analysis of counterparty credit risk

Table 70: CCR5-A – Impact of netting and collateral held on exposure values

This table shows the impact on exposure from netting and collateral held for derivatives and SFTs

	Gross positive fair value or net carrying amount £m	Netting benefits £m	Netted current credit exposure £m	Collateral held £m	Net credit exposure £m
As at 31 December 2018					
1 Derivatives	352,870	293,115	59,755	79,846	23,851
2 SFTs	911,515	892,833	18,682	388	18,682
3 Cross-product netting	–	–	–	–	–
4 Total	1,264,385	1,185,948	78,437	80,234	42,533
As at 31 December 2017					
1 Derivatives	350,891	294,500	56,391	72,788	23,230
2 SFTs	1,079,108	1,057,971	21,137	1,083	20,876
3 Cross-product netting	–	–	–	–	–
4 Total	1,429,999	1,352,471	77,528	73,871	44,106

Net carrying amount for SFTs decreased by £167.6bn to £911.5bn primarily due to compression of gross positions and corresponding netting benefits with limited net credit impact. Further detail relating to collateral can be found in table 71.

Table 71: CCR5-B – Composition of collateral for exposures to CCR

This table shows the types of collateral posted or received to support or reduce CCR exposures relating to derivative transactions or SFTs, including transactions cleared through a CCP

	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received £m	Fair value of posted collateral £m
	Segregated £m	Unsegregated £m	Segregated £m	Unsegregated £m		
As at 31 December 2018						
1 Cash	–	61,236	–	46,865	388	2,118
2 Debt	6,703	9,979	3,760	5,359	–	–
3 Equity	292	675	–	–	–	–
4 Others	–	961	–	–	–	37
Total	6,995	72,851	3,760	52,224	388	2,155
As at 31 December 2017						
1 Cash	–	56,777	–	53,808	822	1,677
2 Debt	7,022	7,575	3,068	7,470	261	261
3 Equity	420	17	–	–	–	–
4 Others	–	977	–	–	–	–
Total	7,442	65,346	3,068	61,278	1,083	1,938

- Derivative collateral received increased by £7.1bn to £79.8bn primarily due to increase in trading activity
- Derivative posted collateral decreased by £8.4bn to £56.0bn primarily due to the removal of client cleared collateral from this table as a result of improved data quality

Analysis of counterparty credit risk

Credit derivative notionals

The following tables show the notional of the credit derivative transactions outstanding as at 31 December 2018.

The first table splits the notional values of credit derivatives, credit default swaps (CDS) and total return swaps (TRS), by two categories: own credit portfolio and intermediation activities.

Own credit portfolio consists of trades used for hedging and credit management. Intermediation activities cover all other credit derivatives.

Credit derivatives booked arising from clearing activities performed on behalf of external counterparties (for example within Barclays subsidiaries) are not reported in this table as the Group does not have any long/short exposures to the underlying reference obligations.

Own credit for the purposes of this note is different from own credit used for accounting disclosures purposes, which represents the change in fair value due to Barclays' own credit standing.

Table 72: Notional exposure associated with credit derivative contracts

Credit derivative product type	Own credit portfolio		Intermediation activities	
	As protection purchaser	As protection seller	As protection purchaser	As protection seller
	£m	£m	£m	£m
As at 31 December 2018				
Credit default swaps	1,134	716	326,029	323,973
Total return swaps	–	–	7,208	–
Total	1,134	716	333,237	323,973
As at 31 December 2017				
Credit default swaps	1,455	476	307,716	301,423
Total return swaps	60	65	7,277	–
Total	1,515	541	314,993	301,423

Notional exposure from intermediation activities, which mainly comprises derivatives used to manage the trading book, increased £40.8bn to £657.2bn primarily driven by trading activity.

Analysis of counterparty credit risk

Table 73: CCR6 – Credit derivatives exposures

This table provides a breakdown of the Barclays' exposures to credit derivatives products.

	Credit derivative hedges		
	Protection bought £m	Protection sold £m	Other credit derivatives £m
As at 31 December 2018			
Notionals			
Single-name credit default swaps	249	11	340,309
Index credit default swaps	–	–	311,189
Total return swaps	–	–	7,208
Credit options	–	–	46,213
Other credit derivatives	–	–	94
Total notionals	249	11	705,013
Fair values	(5)	–	1,022
Positive fair value (asset)	2	–	9,921
Negative fair value (liability)	(7)	–	(8,899)
As at 31 December 2017			
Notionals			
Single-name credit default swaps	475	40	359,474
Index credit default swaps	–	–	250,237
Total return swaps	60	65	7,277
Credit options	–	–	42,833
Other credit derivatives	–	–	844
Total notionals	535	105	660,665
Fair values	(25)	5	994
Positive fair value (asset)	–	5	11,853
Negative fair value (liability)	(25)	–	(10,859)

Credit derivatives notionals increased by £44.0bn to £705.3bn primarily driven by index credit derivative trading activity.

Analysis of counterparty credit risk

Table 74: CCR8 - Exposures to CCPs

This table provides a breakdown of the Barclays' exposures and RWAs to central counterparties (CCP)

	As at 31 December 2018		As at 31 December 2017	
	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m
1 Exposures to QCCPs (total)		1,259		1,563
2 Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which				
3 (i) OTC derivatives	7,629	153	4,896	98
4 (ii) Exchange-traded derivatives	3,228	65	1,691	34
5 (iii) SFTs	3,049	61	1,656	33
6 (iv) Netting sets where cross-product netting has been approved	1,352	27	1,549	31
7 Segregated initial margin	-	-	-	-
8 Non-segregated initial margin	7,571	151	10,205	204
9 Prefunded default fund contributions	1,489	955	1,960	1,261
10 Alternative calculation of own funds requirements for exposures		-		-
11 Exposures to non-QCCPs (total)		-		-
12 Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions); of which				
13 (i) OTC derivatives	-	-	-	-
14 (ii) Exchange-traded derivatives	-	-	-	-
15 (iii) SFTs	-	-	-	-
16 (iv) Netting sets where cross-product netting has been approved	-	-	-	-
17 Segregated initial margin	-	-	-	-
18 Non-segregated initial margin	-	-	-	-
19 Prefunded default fund contributions	-	-	-	-
20 Unfunded default fund contributions	-	-	-	-

All exposures to CCPs are currently treated as exposures to qualifying CCPs until 15th June 2019, in line with the EBA's extension of the transitional period related to own fund requirements for exposures to central counterparties (No 2018/815).

The information disclosed in this table is consistent with the 2% risk weight column in Table 65, except for prefunded default fund contributions which are in Table 62 and Table 63.

Initial Margin decreased £2.6bn to £7.6bn primarily driven by portfolio level changes at CCPs.

Analysis of counterparty credit risk

Credit value adjustments

The Credit value adjustment (CVA) measures the risk from MTM losses due to deterioration in the credit quality of a counterparty to over-the-counter derivative transactions with Barclays. It is a complement to the counterparty credit risk charge, that accounts for the risk of outright default of a counterparty.

Table 75: CCR2 Credit valuation adjustment (CVA) capital charge

Two approaches can be used to calculate the adjustment:

- Standardised approach: this approach takes account of the external credit rating of each counterparty, and incorporates the effective maturity and EAD from the calculation of the CCR
- Advanced approach: this approach requires the calculation of the charge as a) a 10-day 99% Value at Risk (VaR) measure for the current one-year period and b) the same measure for a stressed period. The sum of the two VaR measures is tripled to yield the capital charge.

Credit valuation adjustment (CVA) capital charge

	Exposure value £m	RWA £m
As at 31 December 18		
1 Total portfolios subject to the Advanced Method	17,011	3,270
2 (i) VaR component (including the 3x multiplier)		497
3 (ii) Stressed VaR component (including 3x multiplier)		2,773
4 All portfolios subject to the Standardised Method	195	139
5 Total subject to the CVA capital charge	17,206	3,409
As at 31 December 17		
1 Total portfolios subject to the Advanced Method	16,241	2,631
2 (i) VaR component (including the 3x multiplier)		471
3 (ii) Stressed VaR component (including 3x multiplier)		2,160
4 All portfolios subject to the Standardised Method	674	370
5 Total subject to the CVA capital charge	16,915	3,001

CVA RWAs increased £0.4bn to £3.4bn driven by an increase in exposure, a reduction in hedges and a widening of credit spreads.

Analysis of market risk

This section contains key disclosures describing Barclays Group's market risk profile, highlighting regulatory as well as management measures. This includes risk weighted assets by major business line, as well as Value at Risk measures.

- Risk weighted assets increased £2.5bn to £30.8bn, primarily driven by SVaR and securitisation specific market risk positions.
- Management Value at Risk increased 11% year on year, driven by a higher volatility environment in 2018.
- Market risk RWAs are primarily generated by the following IFRS account classifications: Trading portfolio assets and liabilities; and derivative financial instruments

Risk weighted assets for market risk increased in the year

Total RWAs

+£2.5bn

Driven by SVaR and securitisation specific market risk partially offset by Incremental Risk Charge.

+£540m

Increase in Risks not in VaR

11%

Increase in management Value at Risk

Risk and capital position review

Analysis of market risk

Balance sheet view of trading and banking books

As defined by regulatory rules, a trading book consists of positions held for trading intent or to hedge elements of the trading book. Trading intent must be evidenced in the basis of the strategies, policies and procedures set up by the firm to manage the position or portfolio. The table below provides a Group-wide overview of where assets and liabilities on the Group's balance sheet are managed within regulatory traded and non-traded books.

The balance sheet split by trading book and banking book is shown on an IFRS accounting scope of consolidation. The reconciliation between the accounting and regulatory scope of consolidation is shown in table 1 on page 11.

Table 76: Balance sheet split by trading and banking books

	Banking book ^a £m	Trading book £m	Total £m
As at 31 December 2018			
Cash and balances at central banks	177,069	–	177,069
Cash collateral and settlement balances	60,309	16,913	77,222
Loans and advances at amortised cost	326,406	–	326,406
Reverse repurchase agreements and other similar secured lending	2,260	48	2,308
Trading portfolio assets	6,479	97,708	104,187
Financial assets designated at fair value	12,656	136,992	149,648
Derivative financial instruments	688	221,850	222,538
Financial assets at fair value through other comprehensive income	52,816	–	52,816
Investments in associates and joint ventures	762	–	762
Goodwill and intangible assets	7,973	–	7,973
Property, plant and equipment	2,535	–	2,535
Current tax assets	798	–	798
Deferred tax assets	3,828	–	3,828
Retirement benefit assets	1,768	–	1,768
Other assets	3,425	–	3,425
Total assets	659,772	473,511	1,133,283
Deposits at amortised cost	393,492	1,346	394,838
Cash collateral and settlement balances	43,883	23,639	67,522
Repurchase agreements and other similar secured borrowing	17,009	1,569	18,578
Debt securities in issue	82,286	–	82,286
Subordinated liabilities	20,559	–	20,559
Trading portfolio liabilities	–	37,882	37,882
Financial liabilities designated at fair value	7,592	209,242	216,834
Derivative financial instruments	734	218,909	219,643
Current tax liabilities	628	–	628
Deferred tax liabilities	51	–	51
Retirement benefit liabilities	315	–	315
Other liabilities	7,716	–	7,716
Provisions	2,652	–	2,652
Total liabilities	576,917	492,587	1,069,504

Note

a The primary risk factors for banking book assets and liabilities are interest rates and to a lesser extent, foreign exchange rates. Credit spreads and equity prices will also be factor where the Group holds debt and equity securities respectively, either as financial assets designated at fair value or as financial assets at fair value through other comprehensive income, shown in Note 13 and Note 17 of the Barclays PLC 2018 Annual Report.

Included within the trading book are assets and liabilities which are included in the market risk regulatory measures. For more information on these measures (VaR, SVaR, Incremental risk charge (IRC) and Comprehensive risk measure) see the risk management section on page 163.

Risk and capital position review

Analysis of market risk

Traded market risk review

Review of management measures

The following disclosures provide details on management measures of market risk. See the risk management section on pages 164 to 165 for more detail on management measures and the differences when compared to regulatory measures.

The table below shows the total management VaR on a diversified basis by risk factor. Total management VaR includes all trading positions in CIB and Head Office.

Limits are applied against each risk factor VaR as well as total Management VaR, which are then cascaded further by risk managers to each business.

Table 77: The daily average, maximum and minimum values of management VaR

	2018			2017		
	Average £m	High ^b £m	Low ^b £m	Average £m	High ^b £m	Low ^b £m
For the year ended 31 December 2018^a						
Credit risk	11	16	8	12	18	8
Interest rate risk	8	19	3	8	15	4
Equity risk	7	14	4	8	14	4
Basis risk	6	8	4	5	6	3
Spread risk	6	9	3	5	8	3
Foreign exchange risk	3	7	2	3	7	2
Commodity risk	1	2	–	2	3	1
Inflation risk	3	4	2	2	4	1
Diversification effect ^b	(24)	n/a	n/a	(26)	n/a	n/a
Total management VaR	21	27	15	19	26	14

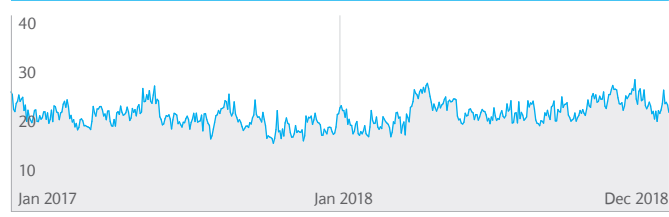
Notes

a Excludes BAGL from 23 July 2018.

b Diversification effects recognise that forecast losses from different assets or businesses are unlikely to occur concurrently, hence the expected aggregate loss is lower than the sum of the expected losses from each area. Historical correlations between losses are taken into account in making these assessments. The high and low VaR data points reported for each category did not necessarily occur on the same day as the high and low VaR reported as a whole. Consequently, a diversification effect balance for the high and low VaR figures would not be meaningful and is therefore omitted from the above table.

Management VaR remained relatively stable year-on-year. The marginal increase in average management VaR in 2018 was due to a higher volatility environment compared to 2017.

Barclays Group Management VaR^a (£m)



Note

a Excludes BAGL from 23 July 2018.

Business scenario stresses

As part of Barclays Group's risk management framework, the performance of the trading business in hypothetical scenarios characterised by severe macroeconomic conditions is modelled on a regular basis. Up to seven global scenarios are modelled, for example, a sharp deterioration in liquidity, a slowdown in the global economy, global recession, and a sharp increase in economic growth.

In 2018, the scenario analyses showed that the largest market risk related impacts would be due to a severe deterioration in financial liquidity and global recession.

Review of regulatory measures

The following disclosures provide details on regulatory measures of market risk. Refer to pages 166 and 167 of this report for more detail on regulatory measures and the differences when compared to management measures.

Barclays Group's market risk capital requirement comprises of two elements:

- the market risk of trading book positions booked to legal entities are measured under a PRA approved internal models approach, including Regulatory VaR, Stressed Value at Risk (SVaR), Incremental Risk Charge (IRC) and Comprehensive Risk Measure (CRM) as required
- the trading book positions that do not meet the conditions for inclusion within the approved internal models approach are calculated using standardised rules.

The table below summarises the regulatory market risk measures, under the internal models approach. Refer to Table 80 "Market Risk own funds requirements", on page 119 of this report for a breakdown of capital requirements by approach.

Risk and capital position review

Analysis of market risk

Table 78: Analysis of Regulatory VaR, SVaR, IRC and CRM

Analysis of Regulatory VaR, SVaR, IRC and Comprehensive Risk Measure^a

	Year-end £m	Avg. £m	Max £m	Min £m
As at 31 December 2018				
Regulatory VaR (1-day)	24	27	41	19
Regulatory VaR (10-day) ^b	76	87	129	61
SVaR (1-day)	83	67	112	41
SVaR (10-day) ^b	262	211	355	130
IRC	146	126	219	52
CRM	–	–	–	–
As at 31 December 2017				
Regulatory VaR (1-day)	28	27	39	19
Regulatory VaR (10-day) ^b	90	85	123	60
SVaR (1-day)	59	63	105	41
SVaR (10-day) ^b	186	200	331	130
IRC	188	202	326	142
CRM	–	1	2	–

Notes

a Excludes BAGL from 23 July 2018

b The 10 day VaR is based on scaling of 1-day VaR model output since VaR is currently not modelled for a 10-day holding period. For more information about regulatory and stressed VaR methodology, refer to page 167

Overall, there was an increase in SVaR and a decrease in IRC in 2018, with no significant movements in other internal model components:

- Regulatory VaR: Average VaR was broadly unchanged compared to the previous year
- SVaR: Average SVaR increase was due to a change in the date range selected for the one-year stressed period
- IRC: Decrease mainly driven by decrease in Rates and Fixed Income Financing, offset by the Foreign Exchange business
- CRM: Remained at zero throughout the year

Table 79: Breakdown of the major regulatory risk measures by portfolio

Breakdown of the major regulatory risk measures by portfolio^a

	Macro £m	Equities £m	Credit £m	Barclays International Treasury £m	Banking £m	Barclays Group Treasury £m	Financial Resource Management ^b £m	Investing and Lending ^b £m
As at 31 December 2018								
Regulatory VaR (1-day)	10	19	14	–	10	5	10	1
Regulatory VaR (10-day)	31	60	45	1	30	17	31	2
SVaR (1-day)	64	59	30	1	20	13	20	4
SVaR (10-day)	203	187	95	2	63	40	64	11
IRC	154	7	209	–	14	9	84	5
CRM	–	–	–	–	–	–	–	–
As at 31 December 2017								
Regulatory VaR (1-day)	13	6	19	–	5	6	8	–
Regulatory VaR (10-day)	42	20	59	–	16	18	25	–
SVaR (1-day)	23	11	41	–	10	11	20	–
SVaR (10-day)	72	35	130	1	30	35	64	–
IRC	203	5	270	–	1	10	65	–
CRM	–	–	–	–	–	–	–	–

Notes

a Excludes BAGL.

b A hierarchy change affecting Financial Resource Management resulted in the creation of the new Investing and Lending portfolio during 2018.

The table above shows the primary portfolios which are driving the trading businesses' modelled capital requirement as at 2018 year-end. The standalone portfolio results diversify at the total level and are not additive. Regulatory VaR, SVaR, IRC and CRM in the prior table show the diversified results at a Barclays Group level.

Risk and capital position review

Analysis of market risk

Capital requirements for market risk

The table below shows the elements of capital requirements and risk weighted assets under the market risk framework as defined in the CRR. The Group is required to hold capital for the market risk exposures arising from regulatory trading books. Inputs for the modelled components include the measures on table 78, using the higher of the end of period value or an average over the past 60 days (times a multiplier in the case of VaR and SVaR).

Table 80: Market risk own funds requirements

	RWA		Capital requirements	
	As at 31 December 2018 £m	As at 31 December 2017 £m	As at 31 December 2018 £m	As at 31 December 2017 £m
Barclays Group				
1 Internal models approach	16,845	14,912	1,348	1,193
2 VaR	3,255	2,823	260	226
3 SVaR	8,872	6,827	710	546
4 Incremental risk charge	1,878	2,962	151	237
5 Comprehensive risk measure	–	–	–	–
6 Risks not in VaR	2,840	2,300	227	184
7 Standardised approach	13,976	13,401	1,118	1,072
8 Interest rate risk (general and specific)	5,568	5,625	445	450
9 Equity risk (general and specific)	5,162	5,608	413	448
10 Foreign exchange risk	585	220	47	18
11 Commodity risk	–	–	–	–
12 Specific interest rate risk of securitisation position	2,661	1,948	213	156
13 Total	30,821	28,313	2,466	2,265

Overall market risk RWAs increased £2.5bn to £30.8bn primarily driven by SVaR and Securitisation specific market risk partially offset by incremental risk charge.

Refer to tables 81 and 82 for detailed movement analysis on the standardised approach and Internal model approach.

Table 80a: Market risk own funds requirements for significant subsidiaries

As at 31 December 2018	Barclays Bank PLC		Barclays Bank UK PLC	
	RWA £m	Capital require- ments £m	RWA £m	Capital require- ments £m
1 Internal models approach	16,684	1,335	–	–
2 VaR	3,233	259	–	–
3 SVaR	9,362	749	–	–
4 Incremental risk charge	1,877	150	–	–
5 Comprehensive risk measure	–	–	–	–
6 Risks not in VaR	2,212	177	–	–
7 Standardised approach	6,786	543	63	5
8 Interest rate risk (general and specific)	3,068	245	24	2
9 Equity risk (general and specific)	2,113	169	–	–
10 Foreign exchange risk	34	3	39	3
11 Commodity risk	–	–	–	–
12 Specific interest rate risk of securitisation position	1,571	126	–	–
13 Total	23,470	1,878	63	5

Risk and capital position review

Analysis of market risk

Table 81: MR1 - Market risk under standardised approach

This table shows the RWAs and capital requirements for standardised market risk split between outright products, options and securitisation. This table includes exposures subject to the Standardised approach only.

	RWA		Capital requirements	
	As at 31 December 2018 £m	As at 31 December 2017 £m	As at 31 December 2018 £m	As at 31 December 2017 £m
Outright products				
1 Interest rate risk (general and specific)	5,568	5,625	445	450
2 Equity risk (general and specific)	4,010	4,681	321	374
3 Foreign exchange risk	585	220	47	18
4 Commodity risk	–	–	–	–
5 Simplified approach	–	–	–	–
6 Delta-plus method	982	690	78	55
7 Scenario approach	170	237	14	19
8 Securitisation (Specific Risk)	2,661	1,948	213	156
9 Total	13,976	13,401	1,118	1,072

Standardised market risk RWAs increased £0.6bn to £14.0bn driven by Securitisations specific market risk which increased by £0.7bn primarily due a growth in trading book positions.

Table 82: MR2-A - Market risk under internal models approach

This table shows RWAs and capital requirements under the internal models approach. The table shows the calculation of capital requirements as a function of latest and average values for each component.

	RWA		Capital requirements	
	As at 31 December 2018 £m	As at 31 December 2017 £m	As at 31 December 2018 £m	As at 31 December 2017 £m
1 VaR (higher of values a and b)	3,255	2,823	260	226
(a) Previous day's VaR (Article 365(1) (VaRt-1))	–	–	124	114
(b) Average of the daily VaR (Article 365(1)) on each of the preceding sixty business days (VaRavg) x multiplication factor ((mc) in accordance with Article 366)	–	–	260	226
2 SVaR (higher of values a and b)	8,872	6,827	710	546
(a) Latest SVaR (Article 365(2) (sVaRt-1))	–	–	341	230
(b) Average of the SVaR (Article 365(2) during the preceding sixty business days (sVaRavg) x multiplication factor (ms) (Article 366)	–	–	710	546
3 Incremental risk charge -IRC (higher of values a and b)	1,878	2,962	151	237
(a) Most recent IRC value (incremental default and migration risks section 3 calculated in accordance with Section 3 articles 370/371)	–	–	151	188
(b) Average of the IRC number over the preceding 12 weeks	–	–	130	237
4 Comprehensive Risk Measure – CRM (higher of values a, b and c)	–	–	–	–
(a) Most recent risk number for the correlation trading portfolio (article 377)	–	–	–	–
(b) Average of the risk number for the correlation trading portfolio over the preceding 12-weeks	–	–	–	–
(c) 8 % of the own funds requirement in SA on most recent risk number for the correlation trading portfolio (Article 338(4))	–	–	–	–
5 Other	2,840	2,300	227	184
6 Total	16,845	14,912	1,348	1,193

Overall modelled market RWAs increased £1.9bn to £16.8bn driven by:

- Increase in SVaR primarily due to equity derivatives and increased hedging activities

Decrease in IRC primarily due to reduced sovereign positions

Analysis of securitisation exposures

This section shows the credit, counterparty credit and market risk arising from securitisation positions. These are already included in previous related sections.

Securitisation positions are subject to a distinct risk weighted assets calculation framework and are therefore disclosed separately.

- Securitisation exposures have increased by £5.0bn, primarily driven by Barclays obtaining tranching credit protection on £5.5bn of existing Corporate and SME loans. The transactions involved Barclays transferring a significant portion of the credit risk on the underlying assets to external counterparties.
- A marginal decrease of £0.1bn is seen in the trading book exposures.

Banking book exposures

+£5.0bn

Trading book exposures

-£0.1bn

Analysis of securitisation exposures

For regulatory disclosure purposes, a securitisation is defined as a transaction or scheme where the payments are dependent upon the performance of a single exposure or pool of exposures and where the subordination of tranches determines the distribution of losses during the on-going life of the transaction or scheme. Such transactions or schemes are undertaken for a variety of reasons including the transfer of risk for Barclays or on behalf of a client.

The tables below detail exposures from securitisation transactions entered into by the Group and cover banking and trading book exposures. Only transactions that achieved significant risk transfer (SRT) are included in these tables. Where securitisations do not achieve SRT (for instance when they are entered into for funding purposes), the associated exposures are presented alongside the rest of the banking book or trading book positions in other sections of the Pillar 3 report. In line with prior year disclosures, CCR securitisation disclosures are part of banking book tables.

Please see page 172 for further details on Barclays' approach to managing risks associated with securitisation activities.

Barclays completes the Pillar 3 disclosures in accordance with the Basel framework and CRDIV, which prescribes minimum disclosure requirements. The following quantitative disclosures are not applicable or result in a nil return for the current and prior reporting period.

- Securitised facilities subject to an early amortisation period - there were no securitisation positions backed by revolving credit exposures, where Barclays acted as the originator and capital relief was sought
- Re-securitisation exposures subject to hedging insurance or involving financial guarantors – there were no such exposures in the current or prior reporting period
- A separate table for capital deduction is no longer applicable, in line with CRD IV
- The new securitisation Regulation (EU) 2017/2402 (the Securitisation Regulation) and Regulation (EU) 2017/2401 (amendments to Capital Requirements Regulation or CRR) have taken effect on 1st January 2019

Barclays Plc Balance sheet – summary versus regulatory view for securitisation exposures

Table 1 shows a reconciliation between Barclays Plc balance sheet for statutory purposes versus a regulatory view. Specifically, for securitisation positions, the regulatory balance sheet will differ from the statutory balance sheet due to the following:

- Deconsolidation of certain securitisation entities that are consolidated for accounting purposes, but not for regulatory purposes (refer to page 174 for a summary of accounting policies for securitisation activities).
- Securitised positions are treated in accordance with the Group's accounting policies, as set out in the 2018 Annual Report. Securitisation balances will therefore be disclosed in the relevant asset classification according to their accounting treatment.
- Some securitisation positions are considered to be off balance sheet and relate to undrawn liquidity lines to securitisation vehicles, market risk derivative positions and where Barclays is a swap provider to a Special Purpose Vehicle (SPV). These balances are disclosed in table 87.

Location of securitisation risk disclosures

As securitisation exposures are subject to a distinct risk weighted asset framework, additional securitisation disclosures are provided separate to the credit, counterparty and market risk disclosures.

This table shows a reconciliation of securitisation exposures in the following section and where the balance can be found in the relevant credit, counterparty and market risk sections.

Table 83: Reconciliation of exposures and capital requirements relating to securitisations

As at 31 December 2018	Table number in this document	Exposure value £m	RWAs £m	Capital requirement £m
Banking book				
Standardised approach				
Credit risk	Tables 29, 30	–	–	–
Total Standardised approach		–	–	–
Advanced IRB				
Credit risk	Tables 29, 30	34,921	4,686	375
Counterparty credit risk	Tables 62, 63	181	123	10
Total IRB		35,102	4,809	385
Total banking book		35,102	4,809	385
Trading book				
Trading book - specific interest rate market risk				
Standardised approach	Table 80	2,035	2,661	213
Total trading book		2,035	2,661	213

Analysis of securitisation exposures

Table 84: Securitisation activity during the year

This table discloses a summary of the securitisation activity during 2018, including the amount of exposures securitised and recognised gain or loss on sale in the banking book and trading book. Barclays is involved in the origination of traditional and synthetic securitisations. A securitisation is considered to be synthetic where the transfer of risk is achieved through the use of credit derivatives or guarantees and the exposure remains on Barclays' balance sheet. A securitisation is considered to be traditional where the transfer of risk is achieved through the actual transfer of exposures to a SPV.

	Banking book				Trading book			
	Traditional £m	Synthetic £m	Total banking book £m	Gain/loss on sale £m	Traditional £m	Synthetic £m	Total trading book £m	Gain/loss on sale £m
As at 31 December 2018								
Originator								
Residential Mortgages	8,929	–	8,929	34	–	–	–	–
Commercial Mortgages	3,065	–	3,065	31	–	–	–	–
Credit Card Receivables	–	–	–	–	–	–	–	–
Leasing	–	–	–	–	–	–	–	–
Loans to Corporates or SMEs	–	6,062	6,062	–	–	–	–	–
Consumer Loans	–	–	–	–	–	–	–	–
Trade Receivables	–	–	–	–	–	–	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	–	–	–
Other Assets	–	–	–	–	–	–	–	–
Total	11,994	6,062	18,056	65	–	–	–	–
As at 31 December 2017								
Originator								
Residential Mortgages	–	–	–	–	–	–	–	–
Commercial Mortgages	3,677	3,143	6,820	73	–	–	–	–
Credit Card Receivables	–	–	–	–	–	–	–	–
Leasing	–	–	–	–	–	–	–	–
Loans to Corporates or SMEs	748	7,743	8,491	29	–	–	–	–
Consumer Loans	–	–	–	–	–	–	–	–
Trade Receivables	–	–	–	–	–	–	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	–	–	–
Other Assets	–	–	–	–	–	–	–	–
Total	4,425	10,886	15,311	102	–	–	–	–

The value of assets securitised in the banking book has increased by £2.7bn to £18.1bn:

Traditional

- Barclays was involved in the origination and issuance of notes for two European Residential Mortgages programs aggregating to £8.9bn
- Barclays decreased its Commercial Mortgages traditional securitisation activity by £0.6bn
- The reduction of £0.7bn in Loans to Corporates or SMEs is driven by European and US CLO transactions where the nature of involvement determined that Barclays shall not be considered as originator for subsequent transactions

Synthetic

- Synthetic securitisation activity during 2018 did not involve any Commercial Mortgage assets hence the reduction of £3.1bn in 2018
- Barclays synthetically securitised £6.1bn Loans to Corporates or SMEs retaining the senior and mezzanine tranches. The transactions that were entered into in December 2018 are subject to ongoing regulatory discussion

The Bank did not issue any trading book traditional securitisation/ Re- securitisation in 2018.

Analysis of securitisation exposures

Table 85: Assets awaiting securitisation

This table discloses the value of assets held on the balance sheet at year end and awaiting securitisation.

Exposure Type	Banking Book £m	Trading Book £m
As at 31 December 2018		
Originator		
Residential Mortgages	–	–
Commercial Mortgages	938	–
Credit Card Receivables	–	–
Leasing	–	–
Loans to Corporates or SMEs	–	–
Consumer Loans	–	–
Trade Receivables	–	–
Securitisations/ Re-securitisations	–	–
Other Assets	–	–
Total	938	–
As at 31 December 2017		
Originator		
Residential Mortgages	–	–
Commercial Mortgages	203	–
Credit Card Receivables	–	–
Leasing	–	–
Loans to Corporates or SMEs	–	–
Consumer Loans	–	–
Trade Receivables	–	–
Securitisations/ Re-securitisations	–	–
Other Assets	–	–
Total	203	–

Banking book assets awaiting securitisation have increased by £0.7bn owing to increase in warehoused assets at year end.

Table 86: Outstanding amount of exposures securitised - Asset value and impairment charges

This table presents the asset values and impairment charges relating to securitisation programmes where Barclays is the originator or sponsor. For programmes where Barclays contributed assets to a securitisation alongside third parties, the amount represents the entire asset pool. Barclays is considered a sponsor of three multi-seller asset-backed commercial paper (ABCP) conduits Sheffield Receivables Corporation, Salisbury Receivables Corporation and Sunderland Receivables Corporation. Please note that table 86 will not reconcile to table 84, as table 86 shows outstanding amount of exposure for the positions held/retained by Barclays. Table 84 shows the total position originated by Barclays in 2018.

	Banking book			Of which past due £m	Recognised losses £m	Trading Book
	Traditional £m	Synthetic £m	Total banking book £m			Traditional £m
As at 31 December 2018						
Originator						
Residential Mortgages	9,824	–	9,824	192	–	–
Commercial Mortgages	876	2,587	3,463	41	–	–
Credit Card Receivables	–	–	–	–	–	–
Leasing	–	–	–	–	–	–
Loans to Corporates or SMEs	–	22,507	22,507	–	–	–
Consumer Loans	–	–	–	–	–	–
Trade Receivables	–	–	–	–	–	–
Securitisations/ Re-securitisations	45	–	45	–	–	–
Other Assets	–	–	–	–	–	–
Total (Originator)	10,745	25,094	35,839	233	–	–
Sponsor						
Residential Mortgages	1,849	–	1,849	3	–	–
Commercial Mortgages	–	–	–	–	–	–
Credit Card Receivables	189	–	189	20	–	–
Leasing	2,349	–	2,349	6	–	–
Loans to Corporates or SMEs	324	–	324	–	–	–
Consumer Loans	2,579	–	2,579	18	–	–
Trade Receivables	683	–	683	2	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	–
Other Assets	274	–	274	1	–	–
Total (Sponsor)	8,247	–	8,247	50	–	–
Total	18,992	25,094	44,086	283	–	–

Analysis of securitisation exposures

Table 86: Outstanding amount of exposures securitised - Asset value and impairment charges continued

As at 31 December 2017	Banking book			Of which past due £m	Recognised losses £m	Trading Book
	Traditional £m	Synthetic £m	Total banking book £m			Traditional £m
Originator						
Residential Mortgages	1,173	–	1,173	160	–	–
Commercial Mortgages	560	3,143	3,703	16	–	–
Credit Card Receivables	–	–	–	–	–	–
Leasing	–	–	–	–	–	–
Loans to Corporates or SMEs	380	16,013	16,393	41	–	–
Consumer Loans	–	–	–	–	–	–
Trade Receivables	–	–	–	–	–	–
Securitisations/ Re-securitisations	44	–	44	–	–	–
Other Assets	–	–	–	–	–	–
Total (Originator)	2,157	19,156	21,313	217	–	–
Sponsor						
Residential Mortgages	730	–	730	–	–	–
Commercial Mortgages	–	–	–	–	–	–
Credit Card Receivables	–	–	–	–	–	–
Leasing	1,576	–	1,576	7	–	–
Loans to Corporates or SMEs	111	–	111	–	–	–
Consumer Loans	4,073	–	4,073	53	–	–
Trade Receivables	308	–	308	2	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	–
Other Assets	256	–	256	–	–	–
Total (Sponsor)	7,054	–	7,054	62	–	–
Total	9,211	19,156	28,367	279	–	–

Banking book securitised assets where Barclays is considered to be the originator or sponsor has increased by £15.7bn to £44.1bn, primarily driven by:

Originator

- Barclays was involved in the origination of Traditional securitisation and issuance of notes with insignificant retention for two European Residential Mortgages programs aggregating to £8.9bn
- Synthetic securitisations increased £5.9bn to £25.1bn driven by the Bank synthetically securitising £6.1bn exposures under Loans to Corporates or SMEs and retaining the senior and mezzanine tranches

Sponsor

- The £1.2bn exposure increase was primarily driven by enhanced business activity in Salisbury Receivables Corporation

Analysis of securitisation exposures

Table 87: Securitisation exposures – by exposure class

The table below discloses the aggregate amount of securitisation exposures held, which is consistent with table 88, 90, and 91.

For originated positions, the table below reflects Barclays retained exposure in the securitisation programmes also disclosed in table 86. For clarity, table 86 discloses the underlying asset value of these programmes.

For invested and sponsored positions, the table below presents the aggregate amount of positions purchased.

	Banking book ^{a,b}				Trading Book ^{a,b}		
	Originator £m	Sponsor £m	Investor £m	Total banking book £m	Originator £m	Investor £m	Total trading book £m
As at 31 December 2018							
On-balance sheet							
Residential Mortgages	35	1	1,971	2,007	–	751	751
Commercial Mortgages	2,343	–	14	2,357	–	181	181
Credit Card Receivables	–	–	–	–	–	42	42
Leasing	–	–	–	–	–	16	16
Loans to Corporates or SMEs	20,584	–	1,234	21,818	–	644	644
Consumer Loans	–	–	1,024	1,024	–	247	247
Trade Receivables	–	–	124	124	–	61	61
Securitisations/ Re-securitisations	–	–	–	–	–	–	–
Other Assets	–	–	1	1	–	93	93
Total On-balance sheet	22,962	1	4,368	27,331	–	2,035	2,035
Off-balance sheet							
Residential Mortgages	75	1,485	360	1,920	–	–	–
Commercial Mortgages	1	–	–	1	–	–	–
Credit Card Receivables	–	316	–	316	–	–	–
Leasing	–	1,740	2	1,742	–	–	–
Loans to Corporates or SMEs	3	228	504	735	–	–	–
Consumer Loans	–	2,199	102	2,301	–	–	–
Trade Receivables	–	531	37	568	–	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	–	–
Other Assets	–	179	9	188	–	–	–
Total Off-balance sheet	79	6,678	1,014	7,771	–	–	–
Total	23,041	6,679	5,382	35,102	–	2,035	2,035

	Banking book ^{a,b}				Trading Book ^{a,b}		
	Originator £m	Sponsor £m	Investor £m	Total banking book £m	Originator £m	Investor £m	Total trading book £m
As at 31 December 2017							
On-balance sheet							
Residential Mortgages	22	–	2,208	2,230	–	775	775
Commercial Mortgages	2,891	–	2	2,893	–	152	152
Credit Card Receivables	–	–	–	–	–	57	57
Leasing	–	–	1	1	–	–	–
Loans to Corporates or SMEs	14,599	–	588	15,187	–	751	751
Consumer Loans	–	–	1,189	1,189	–	256	256
Trade Receivables	–	–	119	119	–	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	89	89
Other Assets	–	–	149	149	–	9	9
Total On-balance sheet	17,512	–	4,256	21,768	–	2,089	2,089
Off-balance sheet							
Residential Mortgages	136	502	416	1,054	–	–	–
Commercial Mortgages	–	–	–	–	–	–	–
Credit Card Receivables	–	418	–	418	–	–	–
Leasing	–	396	56	452	–	–	–
Loans to Corporates or SMEs	4	–	601	605	–	–	–
Consumer Loans	–	4,634	868	5,502	–	–	–
Trade Receivables	–	72	22	94	–	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	–	–
Other Assets	–	148	79	227	–	–	–
Total Off-balance sheet	140	6,170	2,042	8,352	–	–	–
Total	17,652	6,170	6,298	30,120	–	2,089	2,089

Notes

a The exposure type is based on the asset class of underlying positions

b Off balance sheet relates to liquidity lines to securitisation vehicles, market risk derivative positions and where the Group is a swap provider to a SPV

Analysis of securitisation exposures

The total amount of securitisation positions in the banking book has increased by £5bn to £35.1bn, primarily driven by:

On-balance sheet

- Increase in originated Loans to Corporates or SMEs by £6.6bn to £21.8bn due to Barclays synthetically securitising £6.1bn and retaining £5.5bn senior and mezzanine tranches

Off-balance sheet

- A net increase of £0.6bn across sponsored Residential Mortgages , Leasing, Consumer Loans and Trade Receivables driven by business and client activities

Table 88: Securitisation exposures – by capital approach

This table discloses the total exposure value and associated capital requirement of securitisation positions held by the approach adopted in accordance with the Basel framework. Barclays has approval to use, and therefore applies the IRB approach for the calculation of its RWAs. The total population is as per tables 87, 90, and 91.

As at 31 December 2018	Exposure values				Capital requirements			
	Originator £m	Sponsor £m	Investor £m	Total £m	Originator £m	Sponsor £m	Investor £m	Total £m
Banking book								
IRB approach								
Ratings Based Approach								
<= 10%	20,804	1,694	2,421	24,919	123	10	15	148
> 10% <= 20%	1,066	154	2,097	3,317	14	1	22	37
> 20% <= 50%	324	1	118	443	8	–	3	11
> 50% <= 100%	495	5	448	948	24	–	23	47
>100% <= 650%	351	–	96	447	55	–	9	64
> 650% < 1250%	–	–	–	–	–	–	–	–
= 1250% / Look through	1	–	202	203	1	–	37	38
Internal Assessment Approach	–	4,825	–	4,825	–	40	–	40
Supervisory Formula Method	–	–	–	–	–	–	–	–
Total IRB	23,041	6,679	5,382	35,102	225	51	109	385
Standardised approach	–	–	–	–	–	–	–	–
Total banking book	23,041	6,679	5,382	35,102	225	51	109	385
Trading book								
IRB approach								
Ratings Based Approach								
<= 10%	–	–	919	919	–	–	6	6
> 10% <= 20%	–	–	319	319	–	–	4	4
> 20% <= 50%	–	–	353	353	–	–	7	7
> 50% <= 100%	–	–	161	161	–	–	8	8
>100% <= 650%	–	–	107	107	–	–	19	19
> 650% < 1250%	–	–	16	16	–	–	9	9
= 1250% / Look through	–	–	160	160	–	–	160	160
Total trading book	–	–	2,035	2,035	–	–	213	213

Analysis of securitisation exposures

Table 88: Securitisation exposures – by capital approach continued

As at 31 December 2017	Exposure values				Capital requirements			
	Originator £m	Sponsor £m	Investor £m	Total £m	Originator £m	Sponsor £m	Investor £m	Total £m
Banking book								
IRB approach								
Ratings Based Approach								
<= 10%	16,014	1,880	3,097	20,991	96	11	19	126
> 10% <= 20%	752	443	2,310	3,505	10	4	24	38
> 20% <= 50%	282	56	372	710	7	1	6	14
> 50% <= 100%	336	–	158	494	16	–	8	24
>100% <= 650%	245	–	85	330	35	–	8	43
> 650% < 1250%	–	–	–	–	–	–	–	–
= 1250% / Look through	23	–	276	299	1	–	55	56
Internal Assessment Approach	–	3,791	–	3,791	–	32	–	32
Supervisory Formula Method	–	–	–	–	–	–	–	–
Total IRB	17,652	6,170	6,298	30,120	165	48	120	333
Standardised approach	–	–	–	–	–	–	–	–
Total banking book	17,652	6,170	6,298	30,120	165	48	120	333
Trading book								
IRB approach								
Ratings Based Approach								
<= 10%	–	–	1,272	1,272	–	–	8	8
> 10% <= 20%	–	–	207	207	–	–	2	2
> 20% <= 50%	–	–	266	266	–	–	6	6
> 50% <= 100%	–	–	110	110	–	–	5	5
>100% <= 650%	–	–	93	93	–	–	23	23
> 650% < 1250%	–	–	–	–	–	–	–	–
= 1250% / Look through	–	–	141	141	–	–	112	112
Total trading book	–	–	2,089	2,089	–	–	156	156
Risk Weighted Band	IRB S&P Equivalent Rating				STD S&P Equivalent Rating			
<= 10%	AAA to A+ (Senior Position Only)				N/A			
> 10% <= 20%	A to A- (Senior Position Only) / AAA to A+ (Base case)				N/A			
> 20% <= 50%	A to A- (Base Case)				AAA to AA-			
> 50% <= 100%	BBB+ to BBB (Base Case)				A+ to A-			
> 100% <= 650%	BBB- (Base Case) to BB (Base Case)				BBB+ to BBB-			
> 650% < 1250%	BB- (Base Case)				BB to BB-			
= 1250% / deduction	Below BB-				Below BB-			

The securitisation positions in the banking book have increased by £5bn to £35.1bn, primarily driven by:

- An increase of £4.8bn in the <=10% band for “Originator” positions with the Bank synthetically securitising exposures under Loans to Corporates or SMEs and retaining the senior tranches; partially offset by £0.7bn reduction in Investor positions attributable to client activities
- Residual movements across other risk weighted bands of £0.7bn due to synthetic securitisations with the Bank retaining the mezzanine tranches partially offset by £0.3bn reduction in client activity and £0.2bn owing to movement to off balance sheet conduits

Analysis of securitisation exposures

Table 89: Re-securitisation exposures - by risk weight band

This table is a subset of table 88 and discloses Barclays exposures to re-securitisations by capital approach. For the purposes of the table below, a re-securitisation is defined as a securitisation where at least one of the underlying exposures is a securitisation position. This is in line with Basel capital requirements.

For securitisations with mixed asset pools (e.g. certain collateralised loan obligations), the exposure class disclosed in tables 87, 90 and 91 represents the exposure class of the predominant underlying asset class.

As at 31 December 2018	Exposure values				Capital requirements			
	Originator £m	Sponsor £m	Investor £m	Total £m	Originator £m	Sponsor £m	Investor £m	Total £m
Banking book								
IRB approach								
Ratings Based Approach								
<= 10%	-	-	-	-	-	-	-	-
> 10% <= 20%	-	-	-	-	-	-	-	-
> 20% <= 50%	2	-	-	2	-	-	-	-
> 50% <= 100%	-	-	5	5	-	-	-	-
>100% <= 650%	-	-	-	-	-	-	-	-
> 650% < 1250%	-	-	-	-	-	-	-	-
= 1250% / Look through	-	-	1	1	-	-	1	1
Internal Assessment Approach	-	-	-	-	-	-	-	-
Supervisory Formula Method	-	-	-	-	-	-	-	-
Total IRB	2	-	6	8	-	-	1	1
Standardised approach								
Total banking book	2	-	6	8	-	-	1	1
Trading book								
IRB approach								
Ratings Based Approach								
<= 10%	-	-	-	-	-	-	-	-
> 10% <= 20%	-	-	-	-	-	-	-	-
> 20% <= 50%	-	-	-	-	-	-	-	-
> 50% <= 100%	-	-	-	-	-	-	-	-
>100% <= 650%	-	-	-	-	-	-	-	-
> 650% < 1250%	-	-	-	-	-	-	-	-
= 1250% / Look through	-	-	5	5	-	-	5	5
Total trading book	-	-	5	5	-	-	5	5

Analysis of securitisation exposures

Table 89: Re-securitisation exposures – by risk weight band continued

As at 31 December 2017	Exposure values				Capital requirements			
	Originator £m	Sponsor £m	Investor £m	Total £m	Originator £m	Sponsor £m	Investor £m	Total £m
Banking book								
IRB approach								
Ratings Based Approach								
<= 10%	–	–	–	–	–	–	–	–
> 10% <= 20%	–	–	–	–	–	–	–	–
> 20% <= 50%	4	–	–	4	–	–	–	–
> 50% <= 100%	–	–	6	6	–	–	–	–
>100% <= 650%	–	–	–	–	–	–	–	–
> 650% < 1250%	–	–	–	–	–	–	–	–
= 1250% / Look through	–	–	–	–	–	–	–	–
Internal Assessment Approach	–	–	–	–	–	–	–	–
Supervisory Formula Method	–	–	–	–	–	–	–	–
Total IRB	4	–	6	10	–	–	–	–
Standardised approach	–	–	–	–	–	–	–	–
Total banking book	4	–	6	10	–	–	–	–
Trading book								
IRB approach								
Ratings Based Approach								
<= 10%	–	–	–	–	–	–	–	–
> 10% <= 20%	–	–	–	–	–	–	–	–
> 20% <= 50%	–	–	49	49	–	–	1	1
> 50% <= 100%	–	–	44	44	–	–	2	2
>100% <= 650%	–	–	–	–	–	–	–	–
> 650% < 1250%	–	–	–	–	–	–	–	–
= 1250% / Look through	–	–	5	5	–	–	5	5
Total trading book	–	–	98	98	–	–	8	8

Decrease in the trading book exposures is a result of the Group not actively participating in re-securitisation transactions.

Table 90: Aggregate amount of securitised positions retained or purchased by geography – banking book

This table presents total banking book securitised exposure type by geography, based on location of the counterparty.

Exposure Type	United Kingdom £m	Europe £m	Americas £m	Africa and Middle East £m	Asia £m	Total £m
As at 31 December 2018						
Residential Mortgages	2,923	633	326	–	45	3,927
Commercial Mortgages	2,273	72	–	13	–	2,358
Credit Card Receivables	–	–	316	–	–	316
Leasing	–	98	1,644	–	–	1,742
Loans to Corporates or SMEs	7,707	4,680	9,657	38	471	22,553
Consumer Loans	393	389	2,521	–	22	3,325
Trade Receivables	136	353	203	–	–	692
Securitisations/ Re-securitisations	–	–	–	–	–	–
Other Assets	–	–	186	–	3	189
Total	13,432	6,225	14,853	51	541	35,102
As at 31 December 2017						
Residential Mortgages	3,133	51	13	23	64	3,284
Commercial Mortgages	1,782	1,098	13	–	–	2,893
Credit Card Receivables	–	–	418	–	–	418
Leasing	1	–	452	–	–	453
Loans to Corporates or SMEs	7,654	3,711	4,283	–	144	15,792
Consumer Loans	437	809	5,410	–	35	6,691
Trade Receivables	141	–	72	–	–	213
Securitisations/ Re-securitisations	–	–	–	–	–	–
Other Assets	1	2	368	–	5	376
Total	13,149	5,671	11,029	23	248	30,120

Analysis of securitisation exposures

The securitisation positions in the banking book have increased by £5bn to £35.1bn, driven by:

- The Bank synthetically securitising exposures under Loans to Corporates or SMEs of £3.7bn in Americas and £1.0bn in Europe retaining the senior and mezzanine tranches partially offset by business and client activities
- Immaterial movements across multiple counterparties in United Kingdom and Asia

Table 91: Aggregate amount of securitised positions retained or purchased by geography - trading book

This table presents total trading book securitised exposure type by geography. The country is based on the country of operation of the issuer.

Exposure Type	United Kingdom £m	Europe £m	Americas £m	Africa and Middle East £m	Asia £m	Total £m
As at 31 December 2018						
Residential Mortgages	732	10	8	–	–	750
Commercial Mortgages	8	5	167	–	–	180
Credit Card Receivables	4	–	38	–	–	42
Leasing	–	–	16	–	–	16
Loans to Corporates or SMEs	11	417	216	–	–	644
Consumer Loans	13	3	232	–	–	248
Trade Receivables	–	–	61	–	–	61
Securitisations/ Re-securitisations	–	–	–	–	–	–
Other Assets	–	90	4	–	–	94
Total	768	525	742	–	–	2,035
As at 31 December 2017						
Residential Mortgages	696	13	63	–	3	775
Commercial Mortgages	2	–	150	–	–	152
Credit Card Receivables	–	–	57	–	–	57
Leasing	–	–	–	–	–	–
Loans to Corporates or SMEs	3	401	347	–	–	751
Consumer Loans	–	8	248	–	–	256
Trade Receivables	–	–	–	–	–	–
Securitisations/ Re-securitisations	–	89	–	–	–	89
Other Assets	–	–	9	–	–	9
Total	701	511	874	–	3	2,089

The total amount of securitisation positions in the trading book remained broadly stable at £2.0bn.

Analysis of operational risk

This section contains details of capital requirements for operational risk, expressed as RWAs, and an analysis of the Group's operational risk profile, including events which have had a significant impact in 2018.

Operational risk RWAs remained unchanged during the year

£56.7bn

Barclays' operational risk RWA requirement has remained unchanged at £56.7bn.

For the purpose of risk weighted assets, conduct risk remediation provisions have been included within this operational risk section.

Conduct risk is a separate principal risk and is covered more extensively on page 182

Summary of performance in the period

During 2018, total operational risk losses^a decreased to £220m (2017: £291m) and the number of recorded events for 2018 decreased to 1,995 from 2,770 events recorded during the prior year. The total operational risk losses for the year were primarily driven by events falling within the Execution, Delivery and Process Management and External Fraud categories, which tend to be high volume but low impact events.

Key metrics

84%

of Barclays Group's net reportable operational risk events had a loss value of £50,000 or less

61%

of events by number are due to External Fraud

Analysis of operational risk

Operational risk - risk weighted assets

The following table details the Group's operational risk RWAs. Following submission of an application to the PRA, Barclays Group received the PRA's approval to use the Standardised Approach (TSA) for operational risk regulatory capital purposes with effect from 1 April 2018. Barclays Group has conservatively elected to retain its previous operational risk RWA amount unchanged for 2018.

See pages 182 to 185 for information on operational risk management.

Table 92: Risk weighted assets for operational risk

	Barclays UK £m	Barclays International £m	Head Office £m	Total £m
As at 31 December 2018				
Operational Risk				
Basic Indicator Approach	–	–	–	–
Standardised Approach	11,835	28,989	15,836	56,660
Advanced Measurement Approach	–	–	–	–
Total operational risk RWAs	11,835	28,989	15,836	56,660
As at 31 December 2017				
Operational Risk				
Basic Indicator Approach	790	1,527	935	3,252
Standardised Approach	–	–	–	–
Advanced Measurement Approach	11,377	26,181	15,850	53,408
Total operational risk RWAs	12,167	27,708	16,785	56,660

Barclays Group's operational risk RWA requirement has remained static at £56.7bn. Barclays Group currently holds sufficient operational risk capital to cover the range of potential extreme operational risks it faces.

Operational risk profile

Within operational risk, a high proportion of risk events have a low financial cost whilst a very small proportion of operational risk events will have a material impact on the financial results of Barclays Group. In 2018, 84% of Barclays Group's reportable operational risk events by volume had a value of less than £50,000 (2017: 86%), although this type of event accounted for only 14% (2017: 16%) of Barclays Group's total net operational risk losses.

The analysis below presents Barclays Group's operational risk events split by category, as defined by the regulation:

- Execution, Delivery and Process Management impacts decreased to £127m (2017: £216m) and accounted for 58% (2017: 74%) of total operational risk losses. The events in this category are typical of the banking industry as a whole where high volumes of transactions are processed on a daily basis. Whilst the overall frequency of events in this category increased in 2018 to 31% of total events by volume (2017: 24%), the decrease in total impacts was due to a lower number of events with high loss values compared to the prior year.
- External Fraud remains the category with the highest frequency of events at 61% of total events in 2018, although down from 72% in prior year. In this category, high volume, low value events are driven by transactional fraud often related to debit and credit card usage
- Business Disruption and System Failures impacts decreased to £13m (2017: £20m), although count of events increased slightly year-on-year to 93 (73 for 2017) accounting for 4.7% of total events by volume in 2018 (2017: 2.6%). The decrease in total impacts was due to a lower number of events with high loss values compared to the prior year.
- Employment Practices and Workplace Safety impacts show a significant increase to £35m (2017: £0.3m) accounting for 16% of total operational risk losses in 2018. This resulted from a low number of events with significant impacts (three single legacy events relating to closed businesses accounted for 91% of these impacts) although the number of events in this category also increased to 48 for 2018 (11 for 2017).

Barclays Group's operational risk profile is informed by bottom-up risk assessments undertaken by each business unit and top-down qualitative review by the operational risk specialists for each risk type. Fraud, Transaction Operations and Technology continue to be highlighted as key operational risk exposures. The operational risk profile is also informed by a number of risk themes: Cyber, Data, Execution and Resilience. These represent threats to Barclays Group that extend across multiple risk types, and therefore require an integrated risk management approach.

Investment continues to be made in improving the control environment across Barclays Group. Particular areas of focus include new and enhanced fraud prevention systems and tools to combat the increasing level of fraud attempts being made in order to minimise any disruption to genuine transactions. Fraud remains an industry wide threat and Barclays Group continues to work closely with external partners on various prevention initiatives. Technology, resilience and cyber security risks evolve rapidly so Barclays Group maintains continued focus and investment in the control environment to manage these risks, as well as actively partners with peers and relevant organisations to understand and disrupt threats originating outside Barclays Group.

Cyber threats, which are evolving and increasing in sophistication and frequency, continue to be a threat across multiple industries globally. Barclays Group recognises the potential impact of cyber security threats on all areas of its business. This extends to third party suppliers and service providers which also presents a potential source of cyber security threats, leading to the need for increased scrutiny of Barclays Group's relationships with third parties. The potential impact of cyber security threats includes the potential for operational disruption, reputational harm, and costs associated with possible litigation, regulatory investigation, and remediation. The Regulators in Europe and the US have been increasingly focused on cyber security risk management and operational resilience for banking organisations given the complexity of the transactions they process, the number of jurisdictions in which they operate, and the quantities of sensitive data they hold and process. This has resulted in a number of proposed laws, regulations and other requirements that necessitate implementation of a variety of increased controls and enhancement activities for regulated Barclays Group entities. These include, among others, the adoption of cyber security policies and procedures meeting specified criteria, minimum required security measures, controls and procedures for enhanced reporting and public disclosures, compliance certification requirements, and other cyber and information risk governance measures. Further to this, Barclays Group continues to use an intelligence-driven defence approach, analysing external events for current and emerging cyber threats which allows the delivery of proactive counter measures; Barclays Group also completes cyber threat scenarios and incident playbooks to assess our security posture and business impacts and runs an internal adversarial capability which simulates hackers to proactively test controls and responses. The increased

Risk and capital position review

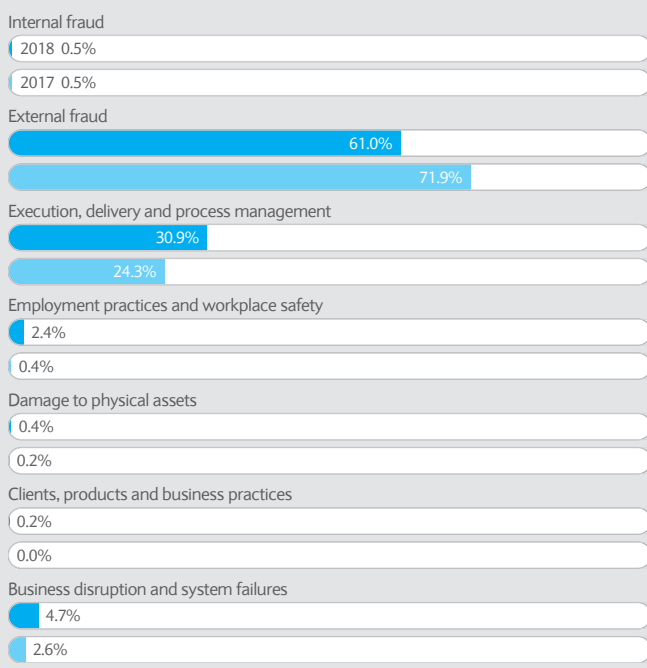
Analysis of operational risk

control environment has enhanced and will continue to enhance our security posture and our ability to better protect the organisation and our customers. Cyber-attacks however are increasingly sophisticated and there can be no assurance that the measures implemented will be fully effective to prevent or mitigate future attacks, the consequences of which could be significant to Barclays Group. Furthermore, such measures have resulted and will result in increased technology and other costs in connection with cyber security mitigation and compliance for Barclays Group. Barclays Group currently incurs an additional cost in mitigating its cyber risk via insurance.

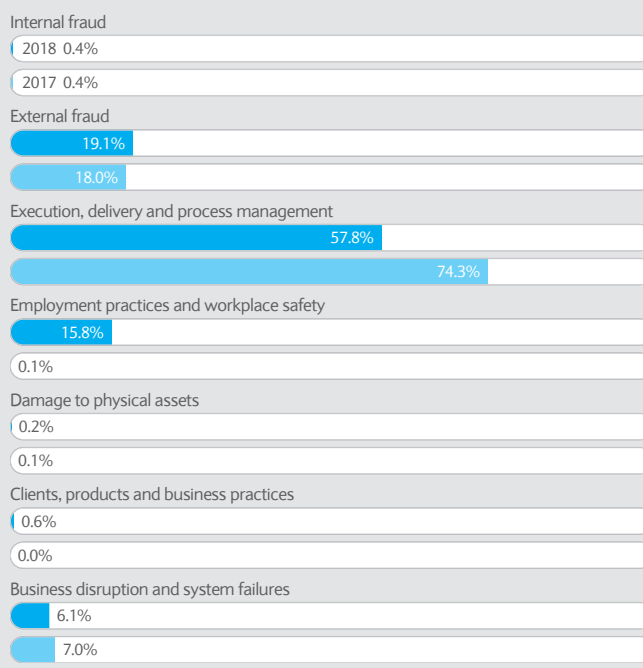
For further information, refer to operational risk management section (pages 182-185).

Operational risk events by Basel event category^a

% of total risk events by count



% of total risk events by value



Note

a The data disclosed includes operational risk losses for reportable events (excluding BAGL) having impact of > £10,000 and excludes events that are conduct or legal risk, aggregate and boundary events. A boundary event is an operational risk event that results in a credit risk impact. Due to the nature of risk events that keep evolving, prior year losses have been updated.

Risk management strategy, governance and risk culture

In this section we describe the approaches and strategies for managing risks at Barclays Group. It contains information on how risk management functions are organised, how they maintain their independence and foster a sound risk culture throughout the Barclays Group.

- The Enterprise Risk Management Framework (ERMF) sets out the tools, techniques and organisational arrangements to enable all material risks to be identified and understood (see page 136)
- A governance structure, encompassing the organisation of the function as well as executive and Board committees, supports the continued application of the ERMF. This is discussed in pages 136 to 138
- A discussion of how our risk management strategy is designed to foster a strong risk culture is contained on page 139
- Pages 139 to 142 describe group-wide risk management tools that support risk management, the Barclays Group ExCo and the Board in discharging their responsibilities, and how they are applied in the strategic planning cycle.

Risk management strategy, governance and risk culture

Barclays Group's risk management strategy

Introduction

The activities of Barclays Group entail risk taking, every day, throughout its business. This section introduces these risks, and outlines arrangements for identifying and managing them. These include roles and responsibilities, frameworks, policies and standards, assurance and lessons learned processes. Barclays Group's approach to fostering a strong risk culture is also described.

Enterprise Risk Management Framework (ERMF)

The ERMF sets the strategic direction for risk management by defining standards, objectives and responsibilities for all areas of Barclays Group. It supports senior management in effective risk management and developing a strong risk culture.

The ERMF sets out:

- Principal risks faced by Barclays Group
- Risk appetite requirements
- Roles and responsibilities for risk management
- Risk committee structure

Principal risks

The ERMF identifies eight Principal Risks (see table below) and sets out associated responsibilities and risk management standards.

risks

Risk appetite is defined as the level of risk which Barclays Group is prepared to accept in the conduct of its activities.

Risk appetite is approved and disseminated across legal entities and businesses, with limits specified to control exposures and activities that have material concentration risk implications for Barclays Group.

Roles and responsibilities in the management of risk

The Three Lines of Defence

All colleagues are responsible for understanding and managing risks within the context of their individual roles and responsibilities, as set out below.

First Line of Defence

The First Line of Defence comprises all employees engaged in the revenue generating and client facing areas of Barclays Group and all associated support functions, including Finance, Treasury, Human Resources and the Chief Operating Office (COO) function. Employees in the First Line are responsible for:

- identifying the risks in their activities and developing appropriate policies, standards and controls
- operating within any and all limits which the Risk and Compliance functions establish over the exposures and activities of the first line; and
- escalating risk events to senior managers in Risk and Compliance.

Second Line of Defence

The Second Line of Defence comprises employees of Risk and Compliance. The role of the Second Line is to establish the limits, rules and constraints under which First Line activities shall be performed, consistent with the risk appetite of Barclays Group, and to monitor the performance of the First Line against these limits and constraints. Note that the First Line may also set limits for a number of their activities related to operational risk. These will remain subject to supervision by the Second Line.

Third Line of Defence

The Third Line of Defence comprises employees of Internal Audit. They provide independent assurance to the Barclays Board and Barclays Group Executive Management over the effectiveness of governance, risk management and control.

The Legal function does not sit in any of the three lines, but supports them all. The Legal function is, however, subject to oversight from Risk and Compliance, with respect to operational and conduct risks.

Risk appetite for the principal

Financial Principal Risks

- **Credit risk:** The risk of loss to the firm from the failure of clients, customers or counterparties, including sovereigns, to fully honour their obligations to the firm, including the whole and timely payment of principal, interest, collateral and other receivables.
- **Market risk:** The risk of loss arising from potential adverse changes in the value of the firm's assets and liabilities from fluctuation in market variables including, but not limited to, interest rates, foreign exchange, equity prices, commodity prices, credit spreads, implied volatilities and asset correlations.
- **Treasury and capital risk:**
 - **Liquidity risk:** The risk that the firm is unable to meet its contractual or contingent obligations or that it does not have the appropriate amount, tenor and composition of funding and liquidity to support its assets.
 - **Capital risk:** The risk that the firm has an insufficient level or composition of capital to support its normal business activities and to meet its regulatory capital requirements under normal operating environments or stressed conditions (both actual and as defined for internal planning or regulatory testing purposes). This includes the risk from the firm's pension plans.
 - **Interest rate risk in the banking book:** The risk that the firm is exposed to capital or income volatility because of a mismatch between the interest rate exposures of its (non-traded) assets and liabilities.

Non-Financial Principal Risks

- **Operational risk:** The risk of loss to the firm from inadequate or failed processes or systems, human factors or due to external events (for example fraud) where the root cause is not due to credit or market risks.
- **Model risk:** The risk of the potential adverse consequences from financial assessments or decisions based on incorrect or misused model outputs and reports.
- **Conduct risk:** The risk of detriment to customers, clients, market integrity, effective competition or Barclays from the inappropriate supply of financial services, including instances of wilful or negligent misconduct.
- **Reputation risk:** The risk that an action, transaction, investment or event will reduce trust in the firm's integrity and competence by clients, counterparties, investors, regulators, employees or the public.
- **Legal risk:** The risk of loss or imposition of penalties, damages or fines from the failure of the firm to meet its legal obligations including regulatory or contractual requirements.

Risk management strategy, governance and risk culture

Risk committees

Product/risk type committees consider risk matters relevant to their business, and escalate as required to the Group Risk Committee (GRC), whose Chairman, in turn, escalates to Barclays PLC Board Committees and the Barclays PLC Board.

There are three Board-level forums which oversee the application of the ERMF and review and monitor risk across the Barclays Group. These are: the Barclays PLC Board Risk Committee, the Barclays PLC Board Audit Committee, and the Barclays PLC Board Reputation Committee. Additionally, the Barclays PLC Board Remuneration Committee oversees pay practices focusing on aligning pay to sustainable performance. Finally, the Barclays PLC Board receives regular information on the risk profile of Barclays Group, and has ultimate responsibility for risk appetite and capital plans.

The Chairman of each Committee prepares a statement each year on the committee's activities, which is included in the Barclays PLC Annual Report 2018 on page 77.

The Barclays PLC Board

One of the Board's responsibilities is the approval of risk appetite (see page 139). The Barclays Group CRO regularly presents a report to the Board summarising developments in the risk environment and performance trends in the key portfolios. The Board is also responsible for the ERMF.

Summaries of the relevant skills, experience and background of the Directors of the Board are presented in the Board of Directors section on pages 51 to 52 of the Barclays PLC Annual Report 2018.

The Barclays PLC Board Risk Committee (BRC)

The BRC monitors Barclays Group's risk profile

against the agreed appetite. Where actual performance differs from expectations, the actions taken by management are reviewed to ascertain that the BRC is comfortable with them. After each meeting, the Chairman of the BRC prepares a report for the next meeting of the Board. All members are independent Non-Executive Directors. The Barclays Group Finance Director and the Barclays Group CRO attend each meeting as a matter of course.

The BRC receives regular reports on risk methodologies, the effectiveness of the risk management framework, and Barclays Group's risk profile, including the material issues affecting each business portfolio and forward risk trends. The committee also commissions in-depth analyses of significant risk topics, which are presented by the Barclays Group CRO or senior risk managers in the businesses. The Chairman of the BRC also sits on the BAC.

The Barclays PLC Board Audit Committee (BAC)

The BAC receives regular reports on the effectiveness of internal control systems, quarterly reports on material control issues of significance, and quarterly papers on accounting judgements (including impairment). It also receives a half-yearly review of the adequacy of impairment allowances, which it reviews relative to the risk inherent in the portfolios, the business environment and Barclays Group's policies and methodologies. The Chairman of the BAC also sits on the BRC.

The Barclays PLC Board Reputation Committee (RepCo)

The RepCo reviews management's recommendations on conduct and reputation risk and the effectiveness of the processes by which Barclays Group identifies and manages these risks. It also reviews and monitors the

effectiveness of Barclays Group's citizenship strategy, including the management of Barclays Group's economic, social and environmental contribution.

The Barclays PLC Board Remuneration Committee (RemCo)

The RemCo receives a detailed report on risk management performance and risk profile, and proposals on ex-ante and ex-post risk adjustments to variable remuneration. These inputs are considered in the setting of performance incentives.

The terms of reference and additional details on membership and activities for each of the principal Board Committees are available from the Corporate Governance section of Barclays Group's website at: home.barclays/about-barclays/barclays-corporate-governance.html.

Coverage of risk reports to executive and Board risk committees

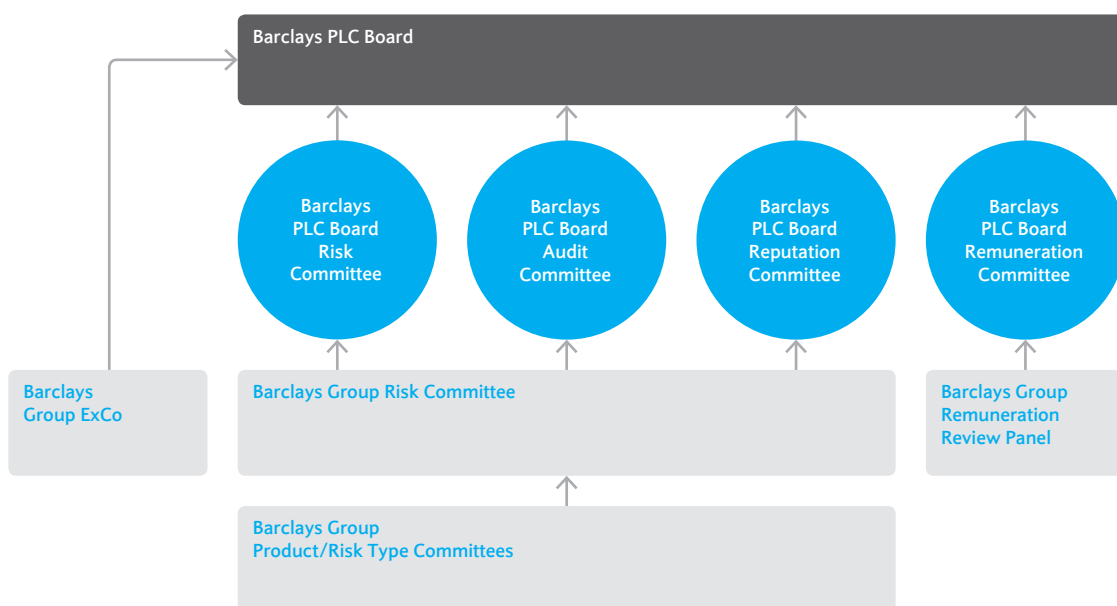
Chairs of Risk Committees at executive and Board levels specify the information they require to discharge their duties. Advance committee calendars are agreed with the committee chairman. Topics that are regularly covered include:

- Risk profile
- Risk perspective on medium-term plans and strategy
- Risk Appetite
- Results of stress tests, including Comprehensive Capital Analysis and Review (CCAR)
- Risk and Conduct inputs into remuneration decisions
- Other technical topics, e.g. Model risk.

Board Committees

Management Level Committees/Forums

Business Level Committees/Forums



Risk management strategy, governance and risk culture

In addition to regular topics, committees consider ad hoc papers on current risk topics, such as:

- Political events and their potential impacts on Barclays and its customers
- Economic developments in major economies or sectors
- Impacts of key market developments on the risk management of the Barclays Group.

Reports are generally presented by CROs or other accountable executives. Occasionally subject matter experts are delegated to present specific topics of interest. Report presenters are responsible for following processes for creating reports that include appropriate controls and that these controls are operated effectively.

Roles and responsibilities in the management of risk – senior management

Certain roles within Barclays carry specific responsibilities and accountabilities with respect to risk management and the ERMF.

Barclays Group Chief Executive Officer (CEO)

The Barclays Group CEO is accountable for leading the development of Barclays' strategy and business plans that align to the Goal, Purpose and Values within the approved Risk Appetite, and for managing and organising executive management to drive their execution. Managing Barclays' financial and operational performance within the approved Risk Appetite is ultimately the CEO's responsibility.

Specifically, a crucial role of the CEO is to appoint the most senior Risk owners at the executive level including the Barclays Group Chief Risk Officer and the Barclays Group General Counsel. He must work with them to embed a strong Risk Culture within the Barclays Group, with particular regard to the identification, escalation and management of risk matters.

Barclays Group Chief Risk Officer (CRO)

The Barclays Group CRO leads the Risk Function across Barclays. His responsibilities include developing and maintaining the ERMF and clearly articulating Risk Culture objectives. Specific accountabilities include:

- preparing and recommending the Barclays Group's Risk Appetite to the Board Risk Committees
- developing, operating and maintaining a comprehensive risk management framework to monitor and manage the risk profile of the Barclays Group
- providing accurate, transparent and timely reporting of the actual Risk Profile of the Barclays Group relative to the set Risk Appetite to the Board
- defining the risk taxonomy (Principal Risks) and updating it as needed so that it remains relevant and comprehensive

- bringing a risk perspective to compensation decisions
- reporting to all the relevant stakeholders on Barclays' risk positions, adherence to Risk Appetite and enterprise wide risks and controls.

Barclays Group Chief Compliance Officer

The Barclays Group Chief Compliance Officer is accountable to the Barclays Group CRO for the strategic and function leadership of the Compliance Function. The Chief Compliance Officer is a member of the Barclays Group Executive Committee, enabling the Compliance Function to discharge its responsibilities properly and independently. Oversight specific accountabilities include:

- managing Barclays Group's conduct and reputation risks and escalating to the Board where appropriate
- setting minimum standards through compliance policies applicable globally and monitoring breaches, especially for Conduct and Reputation Risks and Financial Crime
- inputting into compensation structures, objectives and performance management of employees who can expose Barclays to significant risk
- implementing a robust and effectively managed whistleblowing process on an enterprise-wide basis
- using mandate to access any part of the organisation and any information, bringing to the attention of line and senior management or the Board, as appropriate, any situation that is of concern from a Conduct or Reputation Risk management perspective that could materially violate the approved Risk Appetite guidelines.

Barclays Group General Counsel

The Barclays Group General Counsel is required to:

- develop and maintain the Legal Risk Framework
- define the Legal Risk Policies
- develop the Barclays Group-wide and Business Risk Appetite for Legal Risk.

Barclays Group Chief Controls Officer

The Chief Controls Office, led by the Barclays Group Chief Controls Officer, is responsible for overseeing the practical implementation of operational, conduct and reputation risk controls and control methodologies across the Barclays Group. The Chief Controls Office has the following key responsibilities:

- defining a control framework directing businesses to manage risk exposure within approved operational risk appetites, and monitoring its application;
- reviewing tolerances for non-financial operational risk exposures set by the business, and maintaining their appropriateness;
- maintaining the standard for the creation and maintenance of all control documentation in the Barclays Group; and

- overseeing the execution of control framework requirements consistently across the Barclays Group. Execution includes recording risk events, issues, and the completion of risk and control self-assessments.

Senior Managers Regime

A number of Members of the Board, the majority of the Barclays Group Executive Committee and a limited number of specified senior individuals are also subject to additional rules included within the Senior Managers Regime (SMR), which clarifies their accountability and responsibilities. Those designated with a Senior Manager Function under the SMR are held to four specific rules of conduct in which they must:

- take reasonable steps to establish that the business of the Barclays Group for which they are responsible is controlled effectively
- take reasonable steps to establish that the business of the Barclays Group for which they are responsible complies with relevant regulatory requirements and standards of the regulatory system
- take reasonable steps to make certain that any delegation of their responsibilities is to an appropriate individual and that they oversee the discharge of the delegated responsibilities effectively
- disclose appropriately any information to the FCA or PRA, of which they would reasonably expect notice.

Frameworks, Policies and Standards

Frameworks, policies and standards set out the governance around Barclays' activities:

- Frameworks cover the management processes for a collection of related activities and define the associated policies used to govern them
- Policies set out control objectives, principles and other core requirements for the activities of the Barclays Group. Policies describe "what" must be done
- Standards set out the key controls that must be followed for the objectives set out in the Policy to be met, and who needs to carry them out. Standards describe "how" controls should be undertaken.

Frameworks, Policies and Standards are owned by the area responsible for performing the described activity.

The Barclays Group CRO is accountable for the development and implementation of frameworks, policies and associated standards for each of the Financial Principal Risks, Operational Risk and Model Risk. These must be subject to limits, monitored, reported on and escalated as required. The Barclays Group Chief Compliance Officer is likewise accountable for Conduct Risk and Reputation Risk, and the Barclays Group General Counsel for Legal Risk. The Barclays Group CRO and Barclays Group Chief Compliance Officer have the right to require amendments to any

Risk management strategy, governance and risk culture

Frameworks, Policies or Standards in the Barclays Group, for any reason, including inconsistencies or contradictions among them.

Frameworks, Policies and Standards are subject to minimum annual review, and challenge by the Risk and/or Compliance functions, unless explicitly waived by the relevant heads of those functions. Principal Risk Frameworks are subject to approval by relevant committees of the Board.

Assurance

Assurance is undertaken to assess the control environment and to independently assess the ERMF, to provide confidence to the Board in the risk and control framework. The Controls Assurance Standard defines the requirements for Controls Assurance and Controls Testing.

Internal Audit is responsible for the independent review of risk management and the control environment. Its objective is to provide reliable, valued and timely assurance to the Board and executive management over the effectiveness of controls, mitigating current and evolving material risks and thus enhancing the control culture within the Barclays Group. The Board Audit Committee reviews and approves Internal Audit's plans and resources, and evaluates the effectiveness of Internal Audit. An assessment by independent external advisers is also carried out periodically.

Effectiveness of risk management arrangements

The embedding of the ERMF is monitored by executive and board committees as described above. The ERMF and its component Principal Risks are subject to control testing assurance reviews to confirm its effectiveness or identify issues to be mitigated. Management and the Board are satisfied that these arrangements are appropriate given the risk profile of the Barclays Group.

Learning from our mistakes

Learning from mistakes is central to Barclays' culture and values, demonstrating a commitment to excellence, service and stewardship and taking accountability for failure as well as success. The Barclays Group seeks to learn lessons on a continuous basis to support achievement of strategic objectives, increase operational excellence and to meet commitments to stakeholders, including colleagues, customers, shareholders and regulators.

Barclays has implemented a Barclays Group Lessons Learned process, setting out requirements for the completion of Lessons Learned assessments in response to internal and external risk events. The approach is aligned to the Three Lines of Defence model (see page 136), with businesses and functions accountable for undertaking Lessons Learned Assessments; the Second Line providing

oversight and challenge; and independent review by Internal Audit.

Core components of the Lessons Learned approach include:

- Defined triggers for when Lessons Learned Assessments must be completed
- Requirements and guidance for the completion of root cause analysis to identify the causes of risk events impacting the Barclays Group
- Standardised Templates to report conclusions consistently to relevant management fora and committees
- Use of a central system to record completed Lessons Learned Assessments and to facilitate sharing across the Barclays Group.

Barclays Group's risk culture

Risk culture can be defined as the "norms, attitudes and behaviours related to risk awareness, risk taking and risk management". At Barclays Group this is reflected in how colleagues identify, escalate and manage risk matters.

Our Code of Conduct – the Barclays Way

Globally, all colleagues must attest to the "Barclays Way", our Code of Conduct, and all frameworks, policies and standards applicable to their roles. The Code of Conduct outlines the purpose and values which govern our Barclays Way of working across our business globally. It constitutes a reference point covering the aspects of colleagues' working relationships, with other Barclays Group's employees, customers and clients, governments and regulators, business partners, suppliers, competitors and the broader community.

Embedding of a values-based, conduct culture

Conduct, culture and values remain a priority of the Barclays Group Executive Committee who receive regular, detailed information from the business lines, and clearly communicate their intentions and the Barclays Group's progress to all colleagues. The effectiveness of the risk and control environment, for which all colleagues are responsible, depends on the continued embedment of strong values. Colleagues must be willing to meet their risk management responsibilities and escalate issues on a timely basis. Please see Board Reputation Committee report on page 73 of the Barclays PLC Annual Report 2018 for further details.

Induction programmes support new colleagues in understanding how risk management culture and practices support how Barclays Group does business and the link to Barclays Group's values. The Leadership Curriculum covers the building, sustaining and supporting of a trustworthy organisation and is offered to colleagues globally.

Other risk culture drivers

In addition to values and conduct, we consider the following determinants of risk culture:

- **Management and governance:** This means a consistent tone from the top and clear responsibilities to enable risk identification and challenge
- **Motivation and incentives:** The right behaviours are rewarded and modelled
- **Competence and effectiveness:** This means that colleagues are enabled to identify, escalate and resolve risk and control matters
- **Integrity:** Colleagues are willing to meet their risk management responsibilities, and escalate issues on a timely basis.

Barclays Group-wide risk management tools

To support Barclays Group-wide management of risks, the Board uses risk appetite, mandate and scale, and stress testing as key inputs in the annual planning cycle, including setting of Barclays Group's strategy. The following describes in further detail Barclays Group-wide risk management tools used as part of this process.

Risk Appetite

Risk Appetite is defined as the level of risk which Barclays Group is prepared to accept in the conduct of its activities.

Risk Appetite sets the 'tone from the top' and provides a basis for ongoing dialogue between management and Board with respect to Barclays Group's current and evolving risk profile, allowing strategic and financial decisions to be made on an informed basis.

The Risk Appetite setting process aims to consider the material risks Barclays is exposed to under its business plans.

The Risk Appetite of Barclays Group aims to:

- Specify the level of risk we are willing to take to enable specific risk taking activities.
- Consider all Principal Risks individually and, where appropriate, in aggregate.
- Consistently communicate the acceptable level of risk for different risk types.

Risk Appetite is approved by the Board and must be formally reviewed at least annually in conjunction with the Medium Term Planning (MTP) process.

Risk Appetite is expressed, by the Board, as the acceptable level of deterioration in a set of key financial parameters under a severe but plausible stress scenario defined as the Adverse stress test scenario. For 2019 the key financial parameters are listed below.

Risk management strategy, governance and risk culture

Measure relevant to strategy and risk	Link between strategy and risk profile
Profit after tax	Fundamental performance of Barclays Group and underpins Barclays Group's capacity to make capital distributions.
Common Equity Tier 1 (CET1)	Monitors capital adequacy in relation to capital plan, targets and regulatory hurdle rates.

Based on the specified Risk Appetite, Barclays Group develops both stress loss and mandate & scale limits to control specific activities.

Stress Loss

Stress loss limits are derived from the results of the Adverse stress test scenario. Limits are a reflection of the losses absorbed by the stressed capital plans within Risk Appetite and provide a crucial link between the strategic planning process and Risk Appetite. Stress loss limits are conservatively assumed to be additive but in practice stresses may not happen at the same time. Risk management may over-allocate stress loss limits where they deem it unlikely all businesses will require full limit utilization at the same time. Aggregate utilisation across all risk types is monitored against both the aggregate of stress loss limits and losses absorbed by the stressed capital plan. It is the role of Risk to manage the over-allocation within capital constraints.

Mandate and scale

Mandate and scale is a risk management approach that seeks to formally review and control business activities to make sure that they are within mandate (i.e. aligned with expectations), and are of an appropriate scale (relative to the risk and reward of the underlying activities) based on an appropriately detailed system of limits. Using limits and triggers helps mitigate the risk of concentrations which would be out of line with expectations, and which may lead to unexpected losses of a scale that would be detrimental to the stability of the relevant business line or Barclays Group. For example, for leveraged finance and commercial property finance portfolios, there is a series of limits in place to control exposure within each

business and geographic sector. To further align limits to the underlying risk characteristics, the mandate and scale limits differentiate between types of exposure. There are, for example, individual limits for property investment and property development.

The mandate and scale framework is used to:

- limit concentration risk
- keep business activities within Barclays Group and individual business mandate
- maintain activities at an appropriate scale relative to the underlying risk and reward
- confirm that risk-taking is supported by appropriate expertise and capabilities and take corrective actions otherwise.

The most material mandate and scale limits are designated as A-level (Board level) and B-Level (Barclays Group level). Barclays Group limits are approved by the appropriate risk committee (e.g. Wholesale Credit Risk Management Committee) and are subject to additional escalation and governance requirements.

Further limits are set by risk managers within each business, covering particular portfolios. Unapproved excesses of limits may result in performance management and disciplinary consequences. Business limits are approved by the relevant business risk team and reportable to the relevant risk committee.

Limits reflect the nature of the risk being managed and controlled and are measured by total financing limits, LGD, stress loss or other metrics as appropriate. There is explicit identification of the exposures that are captured by limits and any material exclusion must be agreed. Limits are reviewed at least

annually. The factors taken into consideration when setting the limit include:

- Barclays Group Risk Appetite
- current exposure/MTP forecasts
- risk return considerations
- senior risk management judgement.

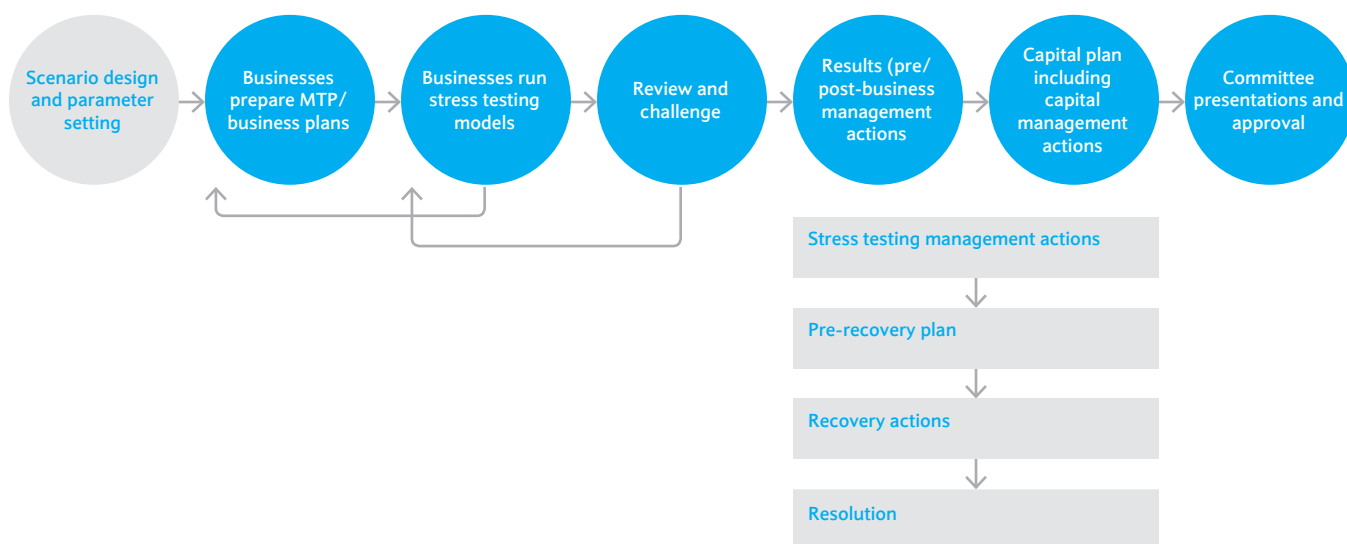
Stress testing

Barclays Group-wide stress tests are integrated within the MTP process and annual review of risk appetite. They aim to check that Barclays Group's financial position and risk profile provide sufficient resilience to withstand the impact of severe economic stress, allowing Barclays to make changes to plans as necessary. Barclays Group-wide stress testing process is supported by a Capital Stress Testing Standard which sets out the minimum control requirements and defines clear roles and responsibilities across businesses and central functions. The results also feed into our internal capital adequacy assessment process (ICAAP).

The following diagram outlines the key steps in Barclays Group-wide stress testing process, which are described below.

Barclays Group-wide stress testing process begins with a detailed scenario setting process, with the GRC and BRC agreeing the range of scenarios to be tested. The scenarios are designed to be severe but plausible, and relevant to the business. A wide range of macroeconomic parameters are defined (such as GDP, unemployment, house prices, FX and interest rates), which allows the impact of the scenarios across the wide range of products and portfolios to be assessed across Barclays Group.

Businesses prepare detailed MTP business plans which form the baseline for the stress test assessment. The stress test process aims to support this level of complexity, using bottom-up analysis across all of our businesses including both on- and off-balance sheet positions, and combines running statistical models with expert judgement. An overview of the stress testing approach by



Risk management strategy, governance and risk culture

Principal Risk is provided in the table below. As part of their stress test assessments, businesses are also required to identify potential management actions that could be taken to mitigate the impact of stress and document these within their results.

The governance process in place includes a detailed review of stress testing methodology, assumptions, judgements, results and management actions within each business

(including sign-off by business CROs and CFOs) and by central functions.

The businesses stress test results are consolidated to form a Barclays Group view which is used to assess the stress impact on Barclays Group's capital plans. For the latter, capital management actions such as reducing dividends or redeeming certain capital instruments may be considered. Barclays Group also maintains recovery plans which

take into consideration actions to facilitate recovery from severe stress or an orderly resolution. These actions are additional to those included in Barclays Group-wide stress testing results.

The overall stress testing results are reviewed and signed off by the Board, following review by the Stress Testing Steering Committee, the Group Risk Committee and the Board Risk Committee.

Summary of methodologies for Barclays Group-wide stress testing by risk type

Principal Risk	Stress testing approach
Credit risk	<ul style="list-style-type: none"> ■ Credit risk impairment: For retail portfolios businesses use statistical models to establish a relationship between IFRS9 impairment loss levels and key macroeconomic parameters such as GDP, inflation and unemployment, incorporating credit quality migration analysis to estimate stressed levels. In addition, house price reductions (for mortgages), increased customer drawdowns (for revolving facilities) and higher interest rates impacting customer affordability lead to higher losses which also contribute to increased impairment levels. For wholesale portfolios the stress shocks on credit risk drivers (PDs, LGDs and EADs) are primarily calibrated using historical and expected relationships with key macro-economic parameters. ■ Counterparty credit risk losses: The scenarios include market risk shocks that are applied to determine the market value under stress of contracts that give rise to Counterparty Credit Risk (CCR). Counterparty losses, including from changes to the Credit Valuation Adjustment and from defaults, are modelled based on the impact of these shocks as well as using stressed credit risk drivers (PDs and LGDs). The same approach is used to stress the market value of assets held as available for sale or at fair value in the banking book. ■ Credit risk weighted assets: The impact of the scenarios is calculated via a combination of business volumes and using similar factors to impairment drivers above, as well as the regulatory calculation and the level of pro-cyclicality of underlying regulatory credit risk models.
Market risk	<ul style="list-style-type: none"> ■ Trading book losses: Market risk factors on the balance sheet are stressed using specific market risk shocks (and are used for the CCR analysis, above). The severity of the shocks applied are dependent on the liquidity of the market under stress, e.g. illiquid positions are assumed to have a longer holding period than positions in liquid markets.
Treasury and Capital Risk	<ul style="list-style-type: none"> ■ Treasury and capital risk will apply scenario variables to forecast Barclays Group's capital, liquidity and IRRBB requirements under stress and review proposed management actions to mitigate the impact of this stress. ■ Interest rate risk in the banking book (IRRBB): IRRBB is assessed by considering:: <ul style="list-style-type: none"> – Stress impact on non-interest income is primarily driven by lower projected business volumes and hence lower income from fees and commissions – Impact on net interest income is driven by stressed margins, which depend on the level of interest rates under stress as well as funding costs, and on stressed balance sheet volumes. This can be partly mitigated by management actions that may include repricing of variable rate products, taking into account interbank lending rates under stress – The impact on costs is mainly driven by business volumes and exchange rates with management actions to partly offset profit reductions (due to impairment increases and decreases in income) such as headcount reductions and lower performance costs. ■ Capital Risk: Capital risk is assessed by taking all modelled risk impacts as part of the stress test (as listed above) into consideration when assessing Barclays Group's ability to withstand a severe stress. The stressed results are considered against internally agreed risk appetite levels but also regulatory minima and perceived market expectations. The MTP can only be agreed by the Board if this is within the agreed risk appetite levels under stress. ■ The IAS19 position of pension funds is also stressed as part of the capital risk assessment, taking into account key economic drivers impacting future obligations (e.g. long-term inflation and interest rates) and the impact of the scenarios on the value of fund assets. ■ Liquidity Risk: Liquidity risk is assessed by the internal liquidity risk metric (LRA), which analyses specific liquidity risk drivers such as wholesale funding and contingent funding needs based on the below scenarios: <ul style="list-style-type: none"> – Barclays idiosyncratic liquidity scenario: Barclays faces a loss of market confidence while the market overall is not impacted – Market wide liquidity stress scenario: All financial institutions are impacted by a market wide loss of confidence – Combined liquidity stress scenario: A simultaneous Barclays idiosyncratic and market liquidity stress scenario – Long term liquidity stress scenario: Barclays is unable for a prolonged period of time to access the capital market on a regular basis.
Operational risk	<ul style="list-style-type: none"> ■ Operational risk loss projections take into account the effect of the stressed economic scenario. Operational risk is also included in the reverse stress testing framework through scenario assessment of idiosyncratic operational risk events.

Risk management strategy, governance and risk culture

Principal Risk	Stress testing approach
Model risk	<ul style="list-style-type: none"> ■ IVU reviews the models and assumptions used in the MTP and stress test and may request the application of overlays to address model deficiencies.
Conduct risk	<ul style="list-style-type: none"> ■ Redress/Remediation: Businesses review existing provisions and include additional provisions in MTP if required. ■ Litigation: Irrespective of whether a provision had been recognised, stress projections of future losses for conduct risk matters managed by legal are estimated by exercising expert judgment on a case by case basis (material matters) or on a portfolio basis (non-material matters) on accordance with the methodology provided by regulators (EBA, PRA).
Reputation risk	<ul style="list-style-type: none"> ■ Reputation risk is not quantified or stressed.
Legal risk	<ul style="list-style-type: none"> ■ Legal risk is not quantified or stressed.

In 2018, the internal Barclays Group-wide stress testing exercise was run as part of the MTP process, where Barclays Group assessed the impact of an "Adverse" global recession scenario. This was used for the MTP Risk Review and risk appetite setting process.

Barclays Group-wide stress testing framework also includes reverse stress testing techniques, which aim to identify the circumstances under which Barclays Group's business model would no longer be viable, leading to a significant change in business strategy and to the identification of appropriate mitigating actions. Examples include extreme macroeconomic downturn ('severely adverse') scenarios, or specific idiosyncratic events, covering both operational risk and capital/liquidity events.

Reverse stress testing is used to help support ongoing risk management and is an input to our Recovery Planning process.

Business and risk type specific stress tests

Stress testing techniques at portfolio and product level are also used to support risk management. For example, portfolio management in the US cards business employs stressed assumptions of loss rates to determine profitability hurdles for new accounts. In the United Kingdom mortgage business, affordability thresholds incorporate stressed estimates of interest rates. In the Corporate and Investment Bank, global scenario testing is used to gauge potential losses that could arise in conditions of a severe but plausible market stress. Stress testing is also conducted on positions in particular asset classes, including interest rates, commodities, equities, credit and foreign exchange.

Regulatory stress testing

In addition to running internal Barclays Group-wide stress tests, Barclays Group also runs regulatory stress tests. In 2018, the PRA ran its annual concurrent stress testing of the major UK banks, which was based on the Bank of England (BoE) stress scenario. The results of the stress test were published in December 2018, and support the BoE's aim for increased transparency as part of its stress testing framework.

Barclays Group is also subject to stress testing by non-UK regulators which includes the European Banking Authority (EBA) and the US Federal Reserve CCAR process (which focuses on the US domicile legal entity). For 2018 the results of the EBA stress test were published in November 2018 with the CCAR stress test results published by the US Federal Reserve in June 2018.

Risk management in the setting of strategy

The risk appetite and (internal) stress testing processes described above form the basis of the risk review of the Medium Term Plan (MTP), performed annually. The MTP embeds Barclays Group's objectives into detailed business plans taking into account the likely business and macroeconomic environment. The strategy is informed by the risk review process, which includes reviewing Barclays Group's risk profile and setting of risk appetite.

- The MTP risk review process includes a review of the proposed risk appetite by the business, including assessment of business plans under stress which is used to inform the MTP.
- If the business' plans entail too high a level of risk, management can challenge them. This assessment is based on a comparison of the businesses' own risk appetite assessment reflected in their business plans ('bottom-up' risk appetite) with the central risk team's view ('top-down' risk appetite) based on the financial constraints set by the Board for Barclays Group.
- Businesses may be asked to update their business plans until the bottom-up risk appetite is within top-down appetite. There is also a detailed review of the stressed estimates and the methodology used to translate the economic scenario to these stressed estimates, as well as the management actions included in the businesses' results to verify that these are appropriate and realistic in a stressed environment.

Risk review meetings are held with the CFO, CRO and Treasurer of each business, where they present their business plans to Barclays Group CRO and Finance Director. The findings from the risk reviews are discussed, including the risk appetite proposals and stress testing results. Businesses may be required to change their business plans as a result of these meetings.

- Interim internal capital adequacy assessments inform the capital planning process and are reviewed during the Risk Review meetings. These assessments are refreshed based on year-end positions and reflected in the ICAAP.
- The MTP Risk Review further reviews the Risk Register outlining the risk profile of businesses to confirm the completeness of risk appetite, capital adequacy assessments and Barclays Group-wide internal stress test.

The BRC has overall responsibility for reviewing Barclays Group's risk profile and making appropriate recommendations to the Board. The Board is ultimately responsible for approving the MTP and Barclays Group's risk appetite. The risk appetite process allows senior management and the Board to understand the MTP's sensitivities by risk type, and includes a set of limits to help maintain Barclays Group stays within its risk appetite, as described above.

Management of credit risk and the internal ratings-based approach

This section discusses the organisation specific to the management of credit risks, and provides details of the calculation of risk weighted assets under the Internal Ratings Based approach of the Basel framework.

- Pages 144 to 151 cover the aspects of the Group's risk management framework specific to credit risk, including committees and Barclays Group's reporting structure
- As 63% of our regulatory capital is for credit risk, we devote pages 151 to 159 to detailing how we approach the internal ratings models, and how the framework supports risk differentiation and management.

Management of credit risk and the internal ratings-based approach

Credit risk

The risk of loss to the firm from the failure of clients, customers or counterparties, including sovereigns, to fully honour their obligations to the firm, including the whole and timely payment of principal, interest, collateral and other receivables.

Overview

The credit risk that Barclays Group faces arises from wholesale and retail loans and advances together with the counterparty credit risk arising from derivative contracts with clients; trading activities, including: debt securities, settlement balances with market counterparties, FVOCI assets and reverse repurchase loans.

Credit risk management objectives are to:

- maintain a framework of controls to oversee credit risk;
- identify, assess and measure credit risk clearly and accurately across Barclays Group and within each separate business, from the level of individual facilities up to the total portfolio;
- control and plan credit risk taking in line with external stakeholder expectations and avoiding undesirable concentrations;
- monitor credit risk and adherence to agreed controls.

Organisation and structure

Wholesale and retail portfolios are managed separately to reflect the differing nature of the assets; wholesale balances tend to be larger and are managed on an individual basis, while retail balances are greater in number but lesser in value and are, therefore, managed in aggregated segments.

The credit risk management teams in each legal entity are accountable to the relevant Legal Entity CRO, who reports to the Barclays Group CRO.

Roles and responsibilities

The responsibilities of the credit risk management teams in the businesses, the sanctioning team and other shared services include: sanctioning new credit agreements (principally wholesale); setting strategies for approval of transactions (principally retail); setting risk appetite; monitoring risk against limits and other parameters; maintaining robust processes, data gathering, quality, storage and reporting methods for effective credit risk management; performing effective turnaround and workout scenarios for wholesale portfolios via dedicated restructuring and recoveries teams; maintaining robust collections and recovery processes/units for retail portfolios; and development of credit risk measurement models.

For wholesale portfolios, credit risk approval is undertaken by experienced credit risk professionals operating within a clearly defined delegated authority framework, with only the most senior credit officers assigned the higher levels of delegated authority. The largest credit exposures, which are outside the Risk Sanctioning Unit or Risk Distribution Committee authority, require the support of a legal entity Senior Credit Officer. For exposures in excess of the legal entity Senior Credit Officer's authority, approval by Group Senior Credit Officer/Board Risk Committee is also required. The Barclays Group Credit Risk Committee, attended by legal entity Senior Credit Officers, provides a formal mechanism for the Barclays Group Senior Credit Officer to exercise the highest level of credit authority over the most material Barclays Group single name exposures.

In the wholesale portfolios, credit risk managers are organised in sanctioning teams by geography, industry and/or product.

The role of the Central Risk function is to provide Barclays Group-wide direction, oversight and challenge of credit risk taking. Central Risk sets the Credit Risk Control Framework, which provides the structure within which credit risk is managed, together with supporting credit risk policies and standards.

Reporting

Barclays Group dedicates considerable resources to gaining a clear and accurate understanding of credit risk across the business and maintaining that its balance sheet correctly reflects the value of the assets in accordance with applicable accounting principles. This process can be summarised in five broad stages:

- measuring exposures and concentrations
- monitoring performance and asset quality
- monitoring for weaknesses in portfolios
- raising allowances for impairment and other credit provisions
- returning assets to a performing status or writing off assets when the whole or part of a debt is considered irrecoverable.

Measuring exposures and concentrations

Loans and advances to customers provide the principal source of credit risk to the Barclays Group although it is also exposed to other forms of credit risk through, for example, loans and advances to banks, loan commitments and debt securities. Risk management policies and processes are designed to identify and analyse risk, to set appropriate risk appetite, limits and controls, and to monitor the risks and adherence to limits by means of reliable and timely data.

Barclays PLC Board Risk Committee

- Reviews and recommends Barclays Group's risk appetite for wholesale and retail credit risk to the Barclays PLC Board
- Reviews Barclays Group's risk profile for wholesale and retail credit risk on behalf of the Barclays PLC Board
- Commissions, receives and considers reports on wholesale and retail credit risk issues

Barclays Group Risk Committee

- Reviews appetite for wholesale and retail credit risk and makes recommendations on the setting of limits to the Barclays PLC Board
- Monitors the risk profile for wholesale and retail credit risk
- Reviews and monitors the control environment for wholesale and retail credit risk

Business Risk Committees

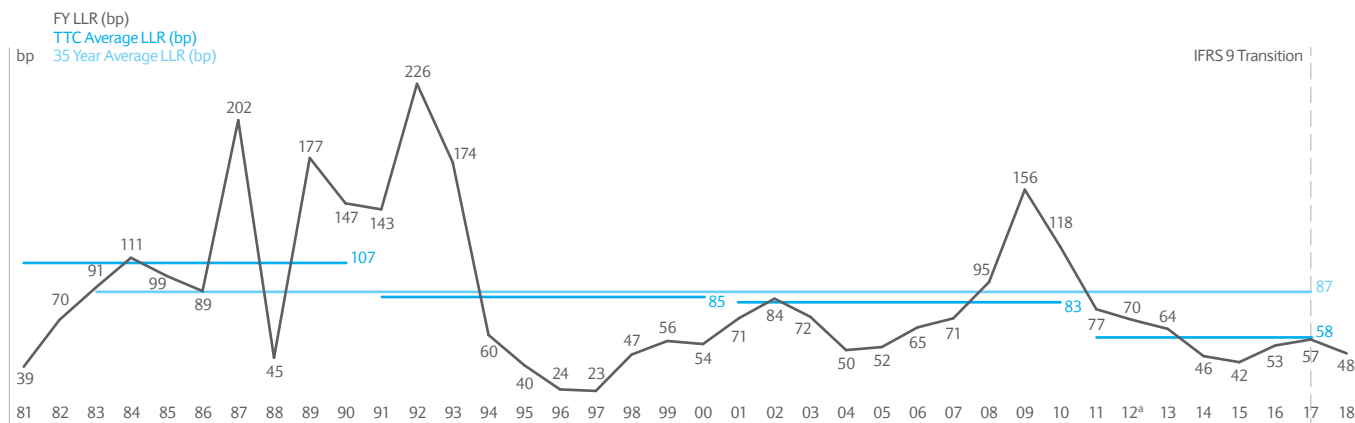
- Oversee activities and manage information relating to business unit portfolios, and identify actions needed to mitigate current and arising credit risks
- Review and approve business unit mandate and scale limits and, where relevant, provide recommendations for limits managed by wholesale and retail risk committees
- Review relevant decisions made by, and material issues and topics raised by, other forums and committees

Wholesale and Retail Credit Risk Management Committees

- Monitor the wholesale and retail credit risk profile against plan and agree required actions
- Review key wholesale and retail credit risk issues
- Review credit risk policies and framework
- Monitor risk appetite consumption – key credit portfolio (mandate and scale) limits

Management of credit risk and the internal ratings-based approach

Group loan loss rate – long-term trend



One area of particular review is concentration risk. A concentration of credit risk exists when a number of counterparties or customers are engaged in similar activities or geographies, and have similar economic characteristics that would cause their ability to meet contractual obligations to be similarly affected by changes in economic and other conditions. As a result, the Barclays Group constantly reviews its concentration in a number of areas including, for example, geography, maturity and industry.

Mandate and scale limits are used to maintain concentrations at appropriate levels, which are aligned with the businesses' stated risk appetite. Limits are typically based on the nature of the lending and the amount of the portfolio meeting certain standards of underwriting criteria. Diversification, to reduce concentration risk, is achieved through setting maximum exposure limits to individual counterparties' exposures. Excesses are reported to the BRC.

Monitoring performance and asset quality

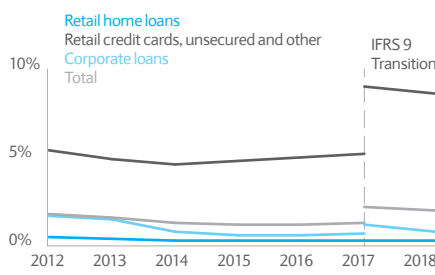
Trends in the quality of Barclays Group's loan portfolio are monitored in a number of ways including tracking loan loss rate and coverage ratios.

Loan loss rate

The loan loss rate (LLR) provides a way of consistently monitoring trends in loan portfolio quality at Barclays Group, business and product levels. The LLR represents the annualised impairment charges on loans and advances to customers and banks and other credit provisions as a percentage of the total, period-end loans and advances to customers and banks, gross of impairment allowances. Details of the LLR for the current period may be found in the Credit Risk Performance section on page 153 in the 2018 Annual Report.

Coverage ratios

Loans and advances total impairment coverage



Total coverage ratios will vary according to the type of product. The increase in 2017 reflects the transition to the new accounting standard IFRS9. Overall, coverage ratios would therefore be expected to remain fairly steady over a defined period of time but in principle, a number of factors may affect Barclays Group's overall coverage ratios, including:

- **The mix of products:** coverage ratios will tend to be lower when there is a high proportion of secured Retail and corporate balances. This is due to the fact that the recovery outlook on these types of exposures is typically higher than Retail credit cards, unsecured and other products, with the result that they will have lower impairment requirements;
- **The stage in the economic cycle:** coverage ratios will tend to be lower in the earlier stages of deterioration in credit conditions. At this stage, Retail delinquent balances will be predominantly in the early delinquency cycles and corporate names will have only recently shown signs of deterioration;

- **Staging:** coverage ratios will tend to be higher when there is a high proportion of balances that have met the criteria for significant increase in credit loss with associated expected credit losses (ECL) moving from a 12-month to a lifetime assessment; and
- **Write-off policies:** the speed with which defaulted assets are written off will affect coverage ratios. The more quickly assets are written off, the lower the ratios will be, since stock with 100% coverage will tend to roll out of more quickly.

Details of the coverage ratios for the current period are shown in the above chart and may be found in the analysis of loans and advances and impairment section at page 155 in the 2018 Annual Report.

Monitoring weaknesses in portfolios

While the basic principles for monitoring weaknesses in Wholesale and Retail exposures are broadly similar, they reflect the differing nature of the assets. As a matter of policy, all facilities granted to corporate or Wholesale counterparties are subject to a review on, at least, an annual basis, even when they are performing satisfactorily.

Wholesale portfolios^c

Within the Wholesale portfolios, the Basel definitions of default are used as default indicators which have been aligned to the IFRS9. Group definitions of default used are:

- Barclays Group puts the credit obligation on a non-accrued status;
- Barclays Group makes a charge-off or account specific identified impairment resulting from a significant perceived decline in credit quality;
- Barclays Group sells the credit obligation at a material credit-related economic loss;

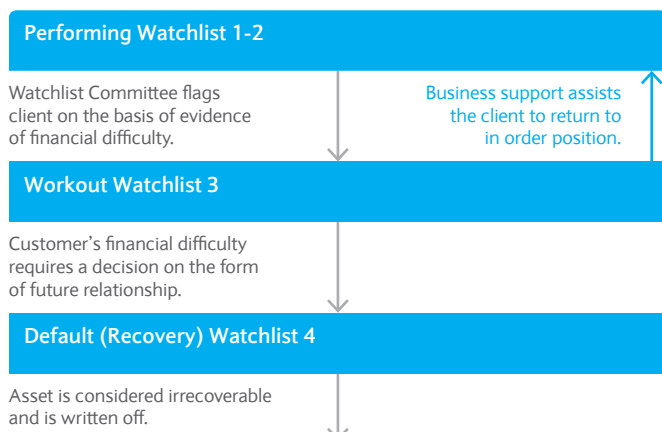
Notes

- a Restated to reflect the impact of IFRS10, which results in some former Exit Quadrant exposures being recorded at fair value from 2012 onwards
- b Figures from 2015 onwards exclude Africa
- c Includes certain Business Banking facilities which are recorded as Retail for management purposes.

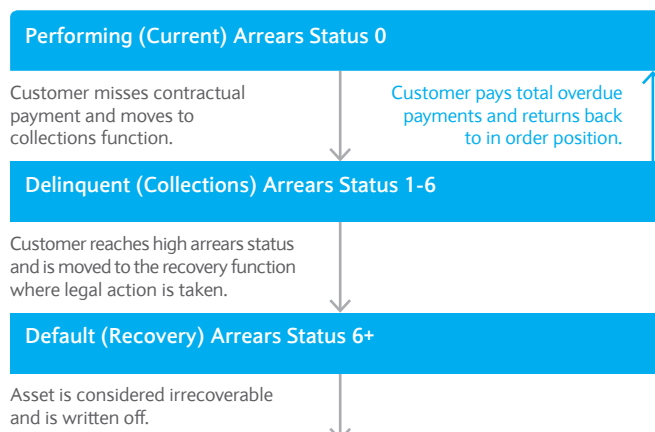
Barclays' approach to managing risks

Management of credit risk and the internal ratings-based approach

Wholesale account status



Retail account status



Write off: the point where it is determined that the asset is irrecoverable.

- Barclays Group triggers a petition for obligor's bankruptcy or similar order;
- Barclays Group becomes aware of the obligor having sought or having been placed in bankruptcy or similar protection where this would avoid or delay repayment of the credit obligation to Barclays Group;
- Barclays Group becomes aware of an acceleration of an obligation by a firm;
- where the obligor is a bank – revocation of authorisation;
- where the obligor is a sovereign – trigger of default definition of an approved External Credit Assessment Institution (ECAI) such as a rating agency;
- Obligor past due more than 90 days on any material credit obligation to Barclays Group.

Wholesale accounts that are deemed to contain heightened levels of risk are recorded on graded watchlists (WL) comprising four categories graded in line with the perceived severity of the risk attached to the lending, and its probability of default. Examples of heightened levels of risk may include, for example:

- a material reduction in profits;
- a material reduction in the value of collateral held;
- a decline in net tangible assets in circumstances which are not satisfactorily explained;
- periodic waiver requests or changes to the terms of the credit agreement over an extended period of time.

These lists are updated monthly and circulated to the relevant risk control points. Once an account has been placed on WL, the exposure is monitored and, where appropriate, exposure reductions are effected.

While all counterparties, regardless of financial health, are subject to a full review of all facilities on at least an annual basis, more frequent interim reviews may be undertaken should circumstances dictate. Specialist recovery functions deal with counterparties in higher levels of WL, default, collection or insolvency. Their mandate is to maximise shareholder value, ideally via working intensively with the counterparty to help them to either return to financial health or, in the cases of insolvency, obtain the orderly and timely recovery of impaired debts. Where a counterparty's financial health gives grounds for concern, it is immediately placed into the appropriate watchlist category.

Retail portfolios

Within the Retail portfolios, which tend to comprise homogeneous assets, statistical techniques more readily allow potential credit weaknesses to be monitored on a portfolio basis. Retail accounts can be classified according to specified categories of arrears status (or 30-day cycle), which reflects the level of contractual payments which are overdue. An outstanding balance is deemed to be delinquent when it is one day or "one penny" down.

Once a loan has passed through a prescribed number of cycles, normally six, it will be charged-off and enter recovery status. Charge-off refers to the point in time when collections activity changes from the collection of arrears to the recovery of the full balance. In most cases, charge-off will result in the account moving to a legal recovery function or debt sale. This will typically occur after an account has been managed by a collections function. However, in certain cases, an account may be charged off directly from a performing status, such as in the case of insolvency or death.

The timings of the charge-off points are established based on the type of loan. For the majority of products, the standard period for charging off accounts is six cycles (180 days past due date of contractual obligation). Early charge-off points are prescribed for unsecured assets. For example, in cases of customer bankruptcy or insolvency, associated accounts are charged off within 60 days of notification.

Returning assets to a performing status Wholesale portfolios

In Wholesale portfolios, an account may only be returned to a performing status when it ceases to have any actual or perceived financial stress and no longer meets any of the watchlist criteria, or once facilities have been fully repaid or cancelled. Unless a facility is fully repaid or cancelled, the decision in Corporate Banking to return an account to performing status may only be taken by the credit risk team, while within the Investment Bank, the decision can only be taken by the BI Watch List Committee.

Retail portfolios

A Retail asset, pre-point of charge-off, may only be returned to a performing status in the following circumstances:

- all arrears (both capital and interest) have been cleared and payments have returned to original contractual payments;
- for revolving products, a re-age event has occurred, when the customer is returned to an up-to-date status without having cleared the requisite level of arrears;

Management of credit risk and the internal ratings-based approach

- for amortising products, which are performing on a programme of Forbearance and meet the following criteria may be returned to the performing book classified as High Risk^a:
 - no interest rate concessions must have been granted
 - restructure must remain within original product parameters (original term + extension)
 - twelve consecutive payments at the revised contractual payment amount must have been received post the restructure event.

For residential mortgages, accounts may also be considered for rehabilitation post charge-off, where customer circumstances have changed. The customer must clear all unpaid capital and interest, and confirm their ability to meet full payments going forward.

Recovery units

Recovery units are responsible for exposures where deterioration of the counterparty/customer credit profile is severe, to the extent that timely or full recovery of exposure is considered unlikely and default has occurred or is likely in the short term. Recovery teams set and implement strategies to recover Barclays Group's exposure through realisation of assets and collateral, in co-operation with counterparties/customers and where this is not possible through insolvency and legal procedures.

In Wholesale, for a case to be transferred to a recovery unit, it must be in default and have ceased to actively trade or be in insolvency. In Retail, the timings of the charge-off points to recovery units are established based on the type of loan. See recovery information included in Analysis of Specific Portfolio and Asset Types section on page 169 in the 2018 Annual Report.

Foreclosures in process and properties in possession

Foreclosure is the process where Barclays Group initiates legal action against a customer, with the intention of terminating the loan agreement whereby Barclays Group may repossess the property subject to local law and recover amounts it is owed. This process can be initiated by Barclays Group independent of the impairment treatment.

Properties in possession include properties held as 'loans and advances to customers' and properties held as 'other real estate owned'.

Held as 'loans and advances to customers' (UK and Italy) refers to the properties where the customer continues to retain legal title but where Barclays Group has enforced the possession order as part of the foreclosure process to allow for the disposal of the asset, or the court has ordered the auction of the property.

Writing off assets

Write-off refers to the point where it is determined that the asset is irrecoverable, it is no longer considered economically viable to try and recover the asset, it is deemed immaterial, or full and final settlement is reached and a shortfall remains. In the event of write-off, the customer balance is removed from the balance sheet and the impairment reserve held against the asset is released.

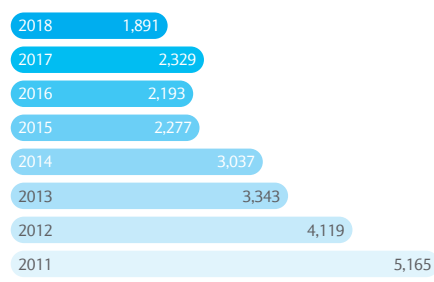
The timing and extent of write-offs may involve some element of subjective judgement. Nevertheless, a write-off will often be prompted by a specific event, such as the inception of insolvency proceedings or other formal recovery action, which makes it possible to establish that some or the entire advance is beyond realistic prospect of recovery. The position of impaired loans is also reviewed at least quarterly to make sure that irrecoverable advances are being written off in a prompt and orderly manner and in compliance with any local regulations.

For Retail portfolios, the timings of the write-off points are established based on the type of loan. For unsecured, assets in the recoveries book will be written-off if the required qualifying repayments are not made within a rolling twelve-month period. For secured loans, the shortfall after the receipt of the proceeds from the disposal of the collateral is written off within three months of that date if no repayment schedule has been agreed with the borrower. Such assets are only written off once all the necessary procedures have been completed and the amount of the loss has been determined.

Subsequent recoveries of amounts previously written off are written back and hence decrease the amount of the reported loan impairment charge in the income statement.

In 2018, total write-offs of impaired financial assets decreased 19% to £1.9bn (2017: £2.3bn).

Total write-offs of financial assets (£m)



Assessment of Impairment Under IFRS9

From 1 January 2018, a new accounting standard, IFRS 9, became effective which prescribes the rules for measuring impairment allowances for financial assets. Under the IFRS9 accounting standard, businesses are required to assess and recognise Expected Credit Losses (ECL) on financial assets from the point of origination or purchase, and to update said assessment at each reporting date, reflecting changes in the credit risk of the financial asset.

ECL represents present value measure of the credit losses expected to result from default events that may occur during a specified period of time. ECLs must reflect the present value of cash shortfalls, i.e. the difference between cash flows due under the contract and the cash flows that the business now expects to receive. Given ECLs take into account both the amount and the timing of payments, a credit loss may result if a contractual payment is missed or received late, even if the debt is ultimately paid in full. ECL assessments must reflect an unbiased and probability weighted assessment of a range of possible outcomes, including reasonable and supportable information about future economic conditions.

Exposures must be assessed and assigned to one of the following populations at each reporting point:

- **Stage 1: Performing risk assets.**
In scope items classified as stage 1 exposure for IFRS9 purposes are those assets performing in line with expectations in place at the point of origination/acquisition. This includes new originations or purchased assets (from the point of initial origination), but excludes exposures deemed credit impaired at point of origination.
Businesses must recognise an impairment allowance equal to 12 months expected credit losses. This allowance must be raised at point of initial reporting of an asset and the assessment updated at each subsequent reporting point.
- **Stage 2: Significantly deteriorated risk assets.**
Assets classified as stage 2 exposures for IFRS9 purposes are those where credit risk has significantly increased compared with expectations at point of origination/acquisition, but which are not yet considered 'Credit Impaired'.

a The identification and subsequent treatment of up-to-date customers who, either through an event or observed behaviour exhibit potential financial difficulty. High Risk includes customers who have suffered recent financial dislocation, i.e. prior forbearance or re-age.

Management of credit risk and the internal ratings-based approach

In order to maintain that individual exposures or groups of assets are correctly classified as stage 2 assets, businesses must undertake regular assessments to identify whether a significant increase in credit risk has occurred since initial recognition. This must take the form of the following:

– **Quantitative Test**

Where the residual annualised weighted average lifetime PD for an individual exposure at the latest reporting date shows a material deterioration compared with that at the origination/acquisition point, then the assets must be classified under stage 2 as having significantly increased credit risk.

The assessment of materiality, i.e. at what point the PD increase is deemed 'significant', is based upon analysis of the portfolios risk profile against a common set of defined principles and key performance metrics.

– **Qualitative Test**

For personal banking assets managed under Retail Portfolios, accounts meeting the portfolios 'high risk' criteria, must be classified under stage 2 as having significantly increased credit risk. For Wholesale portfolios and Business Banking assets managed under Retail portfolios where accounts are managed under the Watch List framework, then customers on WL 2/3, not breaching the quantitative test must be classified under stage 2 as having SICR. Obligors on WL1 may be classified as stage 1 for a maximum period of 6 months. In exceptional circumstances for an obligor on WL2 where it can be proven that a specific exposure is not deteriorated e.g. it is newly originated and therefore cannot have deteriorated, stage 1 ECL may be applied.

– **Backstop Criteria**

For Retail portfolios, adverse changes in payment status must be considered within the assessment, and accounts 1 or more contractual payment in arrears at reporting date classified under stage 2, except where:

- The missed payment is a result of a bank error or technical issue;
- The arrears can be analytically proven not to represent deterioration from risk performance expectations at point of origination/acquisition, e.g. where there is a very small period between cycle point and reporting date. Such exceptions must be approved by the CCRD or nominated delegate. Exposures at 30 days or more past contractual payment due date at the reporting date must be classified as stage 2 assets without exception.

For Wholesale portfolios adverse changes in payment status must be considered within the assessment, and accounts with contractual payment 30 days or more in arrears at reporting date are included within the entry criteria for stage 2,

except where the missed payment is a result of a proven bank error or administrative issue. Where 30 days is used it must be proven that this is a backstop, not a lead driver of exposure moving to stage 2.

Where the assessment of SICR is undertaken on a collective basis, assets must be grouped on the basis of similar risk characteristics, taking into account asset type, industry, geographical location, collateral type, past-due status and other relevant factors.

Businesses must raise an impairment allowance equivalent to the latest assessment of lifetime expected credit losses. This increased allowance must be recognised at the first reporting point following entry to stage 2 and the assessment updated at each subsequent reporting date.

The assessment of lifetime ECLs for stage 2 (and stage 3) assets must consider the maximum contractual period over which the business is exposed to credit risk, including the impact of permitted extensions and pre-payments, i.e. those available at the option of the borrower to which the business must agree.

For loan commitments, the lifetime assessment period is normally the maximum contractual life, i.e. the period from the point the loan commitment is established to closure/full repayment of the exposure. However, where customer use of contractually available pre-payments and/or extension has a material impact on the expected life of the asset, then use of behavioural life may be justified.

For revolving credit facilities, the lifetime assessment period may extend beyond the contractual life to include the period over which the business is expected to be exposed to credit risk, based on historical experience i.e. an assessment of the average time to default, closure or withdrawal of the facility.

Assets may be removed from stage 2 and re-assigned to stage 1 once there is objective evidence that the criteria used to indicate a significant increase in credit risk are no longer met.

■ **Stage 3: Credit impaired risk assets.**

Assets classified as stage 3 exposures for IFRS9 purposes are those where credit risk has increased to a point where they are now considered 'Credit Impaired'. For Retail portfolios, this incorporates all accounts in forbearance, regardless of whether classified as performing or non-performing for EBA reporting purposes. For Wholesale portfolios cases of forbearance not captured by stage 3 (i.e. those not meeting the regulatory definition of default - EBA classification of non-performing) must be classified as stage 2 until such time as the relevant forbearance probation period has been completed.

Businesses must raise an impairment allowance equivalent to the latest assessment of lifetime expected credit losses, i.e. on the same basis as for stage 2 assets.

For Single Name Wholesale Assets, a threshold approach is taken with stage 3 impairment calculated individually. A discounted cash flow is completed establishing a base estimated impairment allowance, derived from the difference between asset carrying values and the recoverable amount.

Where the base allowance is greater than GBP 10m, a bespoke assessment is performed reflecting individual work out strategies. The assessment is clearly and specifically articulated including how general economic scenarios and downside analyses have been applied.

Interest and fee income on stage 3 assets is recognised based on the net amortised value, i.e. the gross carrying amount adjusted for the loss allowance in line with IFRS principles.

For exposures that are considered credit-impaired on purchase or origination, lifetime ECLs must be taken into account within the estimated cash flows at point of initial recognition, and the asset classified as stage 3.

In subsequent reporting periods, businesses must recognise cumulative changes in lifetime ECLs since initial recognition as a loss allowance, i.e. the amount of change in lifetime ECLs is treated as an impairment gain or loss. Assets may only exit stage 3 and be reclassified into stage 1 or stage 2 once the original default trigger event no longer applies.

To fully embed this new standard into businesses, management requires frequent periodic reviews of ECL performance across Barclays Group both in isolation and, more importantly, in comparison to the underlying performance of portfolios and product types.

Review and challenge is carried out through a hierarchy of committees confirming both the adequacy of provisions under the ECL requirements and that all policies, standards and processes have been adhered to (see below) and that appropriate controls are evidenced.

Management of credit risk and the internal ratings-based approach

Governance and oversight of expected credit losses

Barclays Group's organisational structure and internal governance processes oversee the estimation of ECL across several areas, including: i) setting requirements in policy, including key assumptions and the application of key judgements; ii) the design and execution of models; and iii) review of ECL results.

- i. Impairment policy requirements are set and reviewed regularly, at a minimum annually, to maintain adherence to accounting standards. Key judgements inherent in policy, including the estimated life of revolving credit facilities and the quantitative criteria for assessing the SICR, are separately supported by analytical study. In particular, the quantitative thresholds used for assessing SICR are subject to a number of internal validation criteria, particularly in retail portfolios where thresholds decrease as the origination PD of each facility increases. Key policy requirements are also typically aligned to Barclays Group's credit risk management strategy and practices, for example, wholesale customers that are risk managed on an individual basis are assessed for ECL on an individual basis upon entering Stage 3; furthermore, key internal risk management indicators of high risk are used to set SICR policy, for example, retail customers identified as High Risk Management Accounts are automatically deemed to have met the SICR criteria.
- ii. ECL is estimated in line with internal policy requirements using models which are validated by a qualified independent party to the model development area, the Independent Validation Unit (IVU), before first use and at a minimum annually thereafter. Each model is designated an owner who is responsible for:
 - Monitoring the performance of the model, which includes comparing predicted ECL versus flow into stage 3 and coverage ratios; and
 - Proposing post-model adjustments (PMA) to address model weaknesses or to account for situations where known or expected risk factors and information have not been considered in the modelling process. Each PMA above an absolute and relative threshold is approved by the IVU for a set time period (usually a maximum of six months) together with a plan for remediation. The most material PMAs are also approved by the Barclays Group's Chief Risk Officer.

Models must also assess ECL across a range of future economic conditions. These economic scenarios are generated via an independent model and ultimately set by the Senior Scenario Review Committee. Economic scenarios are regenerated at a minimum annually, to align with Barclays Group's medium term

planning exercise, but also if the external consensus of the UK or US economy materially worsen. The scenario probability weights are also updated when scenarios are regenerated and reviewed by the Senior Scenario Committee. Each model used in the estimation of ECL, including key inputs, are governed by a series of internal controls, which include the validation of completeness and accuracy of data in golden source systems, documented data transformations and documented lineage of data transfers between systems.

- iii. The Barclays Group's Impairment Committee, formed of members from both Finance and Risk, is responsible for overseeing impairment policy and practice across Barclays Group and will approve impairment results. Reported results and key messages are communicated to the Barclays PLC Board Audit Committee, which has an oversight role and provides challenge of key assumptions, including the basis of the scenarios adopted.

Forbearance and other concession programmes

Forbearance programmes

Forbearance takes place when a concession is made on the contractual terms of a facility in response to an obligor's financial difficulties. Barclays Group offers forbearance programmes to assist customers and clients in financial difficulty through agreements that may include accepting less than contractual amounts due where financial distress would otherwise prevent satisfactory repayment within the original terms and conditions of the contract. These agreements may be initiated by the customer, Barclays Group or a third party.

Forbearance programmes for Wholesale portfolios

The majority of Wholesale client relationships are individually managed, with lending decisions made with reference to specific circumstances and on bespoke terms.

Forbearance measures consist of concessions made towards a debtor that is experiencing or about to experience difficulties in meeting their financial commitments.

A concession is a sanctioned action, outside of market terms that is beneficial to the debtor. The concession arises solely due to the financial distress of the debtor and the terms are more favourable than those which would be offered to a new or existing obligor with a similar risk profile. Concessions are represented by:

- A change or alteration to the previous terms and conditions of a contract,
- A total or partial refinancing of a troubled debt contract.

The following are some examples of concessions which would be deemed forbearance (where granted to debtors in financial difficulties and outside of market terms):

- A restructuring of the contractual terms of a credit facility (such as a reduction in the interest rate).
- An extension to the maturity date.
- Change to the collateral structure (typically resulting in a net reduction in collateral).
- Favourable adjustment to covenants where repayment profile changes, or non-enforcement of material covenant breach.
- Repayment in some form other than cash (e.g. equity).
- Capitalisation of accrued interest.
- Any other concession made which is designed to alleviate actual or apparent financial stress e.g. a capital repayment holiday.

Where a concession is granted that is not a result of financial difficulty and/or is within Barclays Group's current market terms, the concession would not amount to forbearance. For example, a commercially balanced restructure within the Barclays Group's current terms which involves the granting of concessions and receiving risk mitigation/structural enhancement of benefit to Barclays Group would not be indicative of forbearance.

Forbearance is not deemed to have occurred in the following situations:

- There is a pending maturity event anticipated at the onset of lending i.e. the loan was never structured to amortise to zero.
- A maturity extension or a temporary covenant waiver (e.g. short term standstill) is granted to support a period of negotiation, subject to Barclays Group being satisfied that:
 - the debtor is actively pursuing refinancing or the sale of an asset enabling full repayment at expiry of the extended term
 - no loss is anticipated
 - payments of interest and capital continues as originally scheduled,
 - there is a high probability of a successful outcome within a "reasonable" time scale (6 months for bilateral facilities, 9 months for multi-lender).
- Immaterial amendments to lending terms are agreed, including changes to non-financial internal risk triggers that are only used for internal monitoring purposes.

Forbearance is considered evidence of a Significant Increase in Credit Risk and all forborne debtors are impaired as IFRS9 stage 2 (Lifetime Expected Credit Loss) regardless of Watch List category as a minimum for the lifetime of the forbearance. Those forbearance cases in regulatory default will attract stage 3 impairment treatment.

Management of credit risk and the internal ratings-based approach

Debtors granted forbearance are classified on watch list (WL) for the duration of the forbearance. Counterparties placed on WL status are subject to increased levels of credit risk oversight.

Forborne debtors are classified for reporting as either Performing or Non-Performing.

Non-Performing debtors are defined as:

- More than 90 days past due.
- Assessed as unlikely to pay credit obligations in full without realisation of collateral, regardless of the existence of any past due amount or of the number of days past due.
- Credit impaired.
- Performing forborne debtors granted additional forbearance measures or becoming more than 30 days past-due on a facility obligation.

Performing debtors are classified as debtors that are less than 30 days past due and are without risk of non-payment.

Non-performing status remains in force for a minimum 12 months from the date of classification before the debtor can be considered for performing status. Performing debtors remain forborne for a minimum 24 months before forborne status may be reviewed. The minimum time spent in forbearance for a case that is Non-Performing at the point forbearance is granted is therefore 36 months.

A control framework exists along with regular sampling so that policies for watch list and impairment are enforced as defined and all assets have suitable levels of impairment applied. Portfolios are subject to independent assessment.

Aggregate data for Wholesale forbearance cases is reviewed by the Wholesale Credit Risk Management Committee.

Forbearance programmes for retail portfolios

Retail forbearance is available to customers experiencing financial difficulties. Forbearance solutions take a number of forms depending on individual customer circumstances. It is imperative that the solution agreed is both appropriate to that customer and sustainable, with a clear demonstration from the customer of both willingness and ability to repay. Before any permanent programme of forbearance is granted, an affordability assessment is undertaken to confirm suitability of the offer. Short-term solutions focus on temporary reductions to contractual payments and may change from capital and interest payments to interest only. For loan customers with longer-term financial difficulties, term extensions may be offered, which may include interest rate concessions. For credit card customers with longer-term financial difficulties, a switch to a fully amortising plan may be offered, which may include an interest rate concession.

When an account is placed into a programme of forbearance, the asset will be classified as such until a defined cure period has been successfully completed, incorporating a successful track record of payment in line with the revised terms, upon which it will be returned to the up-to-date book. When Barclays Group agrees a forbearance programme with a customer, impairment allowances recognise the impact on cash flows of the agreement to receive less than the original contractual payments. The Retail Impairment Policy prescribes the methodology for the impairment of forbearance assets, in line with the new IFRS9 methodology adopted in January 2018. Forborne exposures are classified as stage 3 (credit impaired) assets under IFRS9, resulting in higher impairment than for fully performing assets, reflecting the additional credit risk attached to loans subject to forbearance.

When customers exit forbearance, the accounts are ring-fenced as High Risk within the up-to-date book for a period of at least twelve months.

Barclays has continued to assist customers in financial difficulty through the use of forbearance programmes. However, the extent of forbearance offered by Barclays Group to customers and clients remains small in comparison to the overall size of the loan book.

The level of forbearance extended to customers in other Retail portfolios is not material and, typically, does not currently play a significant part in the way customer relationships are managed. However, additional portfolios will be added to this disclosure should the forbearance in respect of such portfolios become material.

A Retail loan is not considered to be renegotiated where the amendment is at the request of the customer, there is no evidence of actual or imminent financial difficulty and the amendment meets with all underwriting criteria. In this case it would be treated as a new loan. In the normal course of business, customers who are not in financial difficulties frequently apply for new loan terms, for example to take advantage of a lower interest rate or to secure a further advance on a mortgage product. Where these applications meet our underwriting criteria and the loan is made at market interest rates, the loan is not classified as being in forbearance. Only in circumstances where a customer has requested a term extension, interest rate reduction or further advance and there is evidence of financial difficulty is the loan classified as forbearance and included in our disclosures on forbearance on page 171 of the 2018 Annual Report.

Please see the credit risk performance section on pages 172 to 174 of the 2018 Annual Report for details of principal Wholesale and Retail assets currently in forbearance.

Other programmes

Retail re-aging activity

Re-aging refers to the placing of an account into an up-to-date position without the requisite repayment of arrears. The re-age policy applies to revolving products that have a minimum payment requirement only. No reduction is made to the minimum due payment amounts which are calculated, as a percentage of balance, with any unpaid principal included in the calculation of the following month's minimum due payment.

The changes in timing of cash flows following re-aging do not result in any additional cost to Barclays Group. The following are the conditions required to be met before a re-age may occur:

- the account must not have been previously charged off or written off
- the borrower cannot be bankrupt, subject to an Individual Voluntary Arrangement (a UK contractual arrangement with creditors for individuals wishing to avoid bankruptcy), or deceased
- the borrower must show a renewed willingness and ability to repay the debt. This will be achieved by the borrower making at least three consecutive contractual monthly payments or the equivalent cumulative amount. Contractual monthly payment is defined as the contractual minimum due. Funds may not be advanced for any part of this
- no account should be re-aged more than once within any twelve-month period, or more than twice in a five-year period.

Re-aged assets are included in portfolios High Risk population, and are classified as stage 2 assets (i.e. as having significantly increases credit risk) for IFRS9 impairment purposes. This results in an appropriately higher impairment allowance being recognised on the assets.

Retail small arrears capitalisation

All small arrears capitalisations are now considered a form of Forbearance, based on the European Banking Authority's requirements for Supervisory Reporting on Forbearance and Non-Performing exposures.

Management of credit risk and the internal ratings-based approach

Refinancing risk

This is the risk that the borrower or group of correlated borrowers may be unable to repay bullet-repayment loans at expiry, and will therefore need refinancing.

From a large corporates perspective, refinancing risk will typically be associated with loans that have an element of bullet repayment incorporated into the repayment profile. Refinancing risk is taken into account on a case by case basis as part of the credit review and approval process for each individual loan. The review will consider factors such as the strength of the business model and sustainability of the cash flows; and for bridge loans, the certainty of the sources of repayment and any associated market risk.

Commercial real estate loans will frequently incorporate a bullet repayment element at maturity. Where this is the case, deals are sized and structured to enable Barclays Group to term out the loan if the client were unable to refinance the loan at expiry. Credit review will incorporate an examination of various factors that are central to this consideration, such as tenant quality, tenancy agreement (including break clauses), property quality and interest rate sensitivity. Loans to small and medium enterprises (SMEs) will typically be either revolving credit lines to cover working capital needs or amortising exposures, with periodic refinancing to give the opportunity to review structure, pricing, etc.

Environmental risk

Environmental risk is recognised as a mainstream credit risk issue and Barclays Group has a dedicated Environmental Risk Management team, as part of the Group Credit Risk Management function. Environmental issues are considered in credit risk assessment, and environmental risk standards are included in the Wholesale Credit Risk Control Framework.

Barclays Group's approach to environmental credit risk management addresses risk under two categories, namely Direct risk and Indirect risk, which are covered below.

Direct risk can arise when Barclays Group takes commercial land as collateral. In many jurisdictions, enforcement of a commercial mortgage by Barclays Group, leading to possession, potentially renders Barclays Group liable for the costs of remediating a site if deemed by the regulator to be contaminated, including for pre-existing conditions. In the UK, Barclays Group's approach requires commercial land, if being pledged as collateral, to be subject to a screening mechanism. Where required, a further assessment of the commercial history of a piece of land and its potential for environmental contamination helps reflect any potential environmental degradation in the value ascribed to that security. It also identifies potential liabilities which may be incurred by Barclays Group, if realisation of the security were to become likely.

Indirect risk can arise when environmental issues may impact the creditworthiness of the borrower. For instance, incremental costs may be incurred in upgrading a business' operations to meet emerging environmental regulations or tightening standards. In other circumstances, failure to meet those standards may lead to fines. Environmental impacts on businesses may also include shifts in the market demand for goods or services generated by our customers, or changing supply chain pressures. Environmental considerations affecting our clients can be varied. Barclays Group has developed a series of environmental risk briefing notes, covering ten broad industry headings ranging from Agriculture and Fisheries to Oil and Gas, from Mining and Metals to Utilities and Waste Management. These briefing notes are available to colleagues in business development and credit risk functions across the organisation, outlining the nature of environmental and social risks of which to be aware, as well as the factors which mitigate those risks.

The growing importance of climate change as a source of indirect risk is increasingly being recognized in credit policy discussions. Climate risk can arise as physical risk, where changing weather patterns may adversely impact a client's operations, their access to critical resources, their supply chains or their distribution networks. It can also be a transition risk if movement to a lower carbon economy increases the costs or reduces the demand for their products or services. Climate risks are assessed at a relationship level or on a transactional level, such as assessing a client's perspective on the potential impacts of the climate change agenda on their operations, and the extent to which such impacts are reflected in their business planning assumptions.

Barclays is a member of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD), and signed the Statement of Support for the TCFD Recommendations, which were published in June 2017. The TCFD recommendations aim to improve the disclosure of information to allow investors, regulators and other stakeholders to better assess and manage the risks and opportunities resulting from climate change; we rely on appropriate disclosures from clients to inform our own climate-related sector risk management. Clear understanding and analysis of potential financial risks and opportunities in short, medium and longer term horizons is still at an early stage. We anticipate that disclosures will continue to develop over time, supported by improved analytical tools, data and market practice. This will support Barclays as a user of climate disclosures across industry sectors and subsequently inform our own disclosures as a preparer. We provide summary disclosures on page 26 of the Barclays PLC Annual Report 2018 with additional detail, including results of pilot scenario analysis and wider activity in 2018, available in the Barclays PLC Environmental Social Governance Report 2018.

Internal ratings based (IRB) approach

The IRB approach largely relies on internal models to derive the risk parameters/ components used in determining the capital requirement for a given exposure. The main risk components include measures of the probability of default (PD), loss given default (LGD) and the exposure at default (EAD). The IRB approach is divided into three alternative applications: Own-Estimates, Supervisory Estimates and Specialised Lending:

Own-Estimates IRB (OEIRB): Barclays uses its own models to estimate PD, LGD and EAD to calculate given risk exposures for various asset classes and the associated Risk Weighted Assets (RWAs).

Supervisory IRB (SIRB): Barclays uses its own PD estimates, but relies on supervisory estimates for other risk components. The SIRB approach is particularly used to floor risk parameters for wholesale credit exposures where default data scarcity may impact the robustness of the model build process.

Specialised Lending IRB: For specialised lending exposures for which PD cannot be modelled reliably, Barclays uses a set of risk weights defined in the relevant regulation, and takes into account a range of prescribed risk factors.

While in the past the industry has used the terms 'Advanced', 'Foundation' and 'Slotting' IRB, the current enforcing regulation (the Capital Requirements Regulation) does not use these terms.

The IRB calculation for credit risk

For both OEIRB and SIRB approaches, Barclays uses the regulatory prescribed risk-weight functions for the purposes of deriving capital requirements.

In line with regulatory requirements, Long Run Average PD and downturn LGD and CF (Conversion Factor) estimates are used for each customer/facility to determine regulatory capital for all exposures in scope.

For the purpose of pricing and existing customer management, point in time (PIT) PD, LGD and EAD are generally used as these represent the best estimates of risk given the current position in the credit cycle. Whilst Long Run Average PDs are always tested at grade/pool level, PIT PDs are also used for the calculation of capital on certain retail unsecured products, in line with regulation.

Management of credit risk and the internal ratings-based approach

Applications of internal ratings

The three components – PD, LGD and CF – are the building blocks used in a variety of applications that measure credit risk across the entire portfolio:

- **credit approval:** PD models are used in the approval process in both retail and wholesale portfolios. In high-volume retail portfolios, application and behaviour scorecards are frequently used as decision-making tools. In wholesale and some retail mortgage portfolios, PD models are used to direct applications to an appropriate credit-sanctioning level
- **credit grading:** this was originally introduced in the early 1990s to provide a common measure of risk across Barclays Group. Barclays now employs a 21-point scale of default probabilities. In some applications, grades in this scale are divided further to permit more detailed analysis. These are shown in Table 42 on page 70.
- **risk-reward and pricing:** PD, LGD and CF estimates are used to assess the profitability of deals and portfolios and to facilitate risk-adjusted pricing and strategy decisions
- **risk appetite:** estimates are used to calculate the expected loss and the potential volatility of loss in Barclays Group's risk appetite framework. See page 139.
- **impairment calculation:** under IFRS9, ECL outputs are produced based on PD, EAD and CF IRB feeder models, with scenario and weighting. See page 147.
- **collections and recoveries:** model outputs are used to identify segments of the portfolio where collection and recovery efforts should be prioritised
- **economic capital (EC) calculation:** most EC calculations use similar inputs as the regulatory capital (RC) process
- **risk management information:** Risk generate reports to inform senior management on issues such as business performance, risk appetite and EC consumption. Model outputs are used as key indicators in those reports. Risk also generates regular reports on model risk, which covers model accuracy, model use, input data integrity and regulatory compliance among other issues.

Ratings processes and models for credit exposures

Wholesale credit

To construct ratings for wholesale customers, including financial institutions, corporations, specialised lending, purchased corporate receivables and equity exposures, Barclays complements its internal models suite with external models and rating agencies' information. A model hierarchy is in place requiring users/credit officers to adopt a consistent approach/model to rate each counterparty based on the asset class type and the nature of the transaction.

Wholesale PD models

Barclays employs a range of methods in the construction of these models:

- statistical models are used for our high volume portfolios such as small or medium enterprises (SME). The models are typically built using large amounts of internal data, combined with supplemental data from external data suppliers where available. Wherever external data is sourced to validate or enhance internally held data, similar data quality standards to those applicable to the internal data management are enforced.
- structural models incorporate, in their specification, the elements of the industry-accepted Merton framework to identify the distance to default for a counterparty. This relies upon the modeller having access to specific time series data or data proxies for the portfolio. Data samples used to build and validate these models are typically constructed by appropriately combining data sets from internal default observations with comparable externally obtained data sets from commercial providers such as rating agencies and industry data gathering consortia.
- expert lender models are used for those parts of the portfolio where there is insufficient internal or external data to support the construction of a statistically robust model. These models utilise the knowledge and in-depth expertise of the senior credit officers dealing with the specific customer type being modelled. For all portfolios with a low number of default observations, Barclays Group adopts specific regulatory rules, methodologies and floors in its estimates so that the calibration of the model meets the current regulatory criteria for conservatism.

Wholesale LGD models

The LGD models typically rely on statistical analysis to derive the model drivers (including seniority of claim, collateral coverage, recovery periods, industry and costs) that best explain Barclays Group's historical loss experience, often supplemented with other relevant and representative external information where available. The models are calibrated to downturn conditions for regulatory capital purposes and, where internal and external data is scarce, they are subject to SIRB floors so that the calibration of the model meets the current regulatory criteria for conservatism.

Wholesale CF models

The wholesale CF models estimate the potential utilisation of the currently available headroom based on statistical analysis of the available internal and external data and past client behaviour. As is the case with the LGD models, the CF models are subject to downturn calibration for regulatory capital purposes and to floors where data is scarce.

Retail credit

Retail banking and cards operations have long and extensive experience of using credit models in assessing and managing risks. As a result, models play an integral role in customer approval and management decisions. Most retail portfolios are data rich; consequently, most models are built in-house

using statistical techniques and internal data. Exceptions are some expert lender models (similar to those described in the wholesale context) where data scarcity precludes the statistically robust derivation of model parameters. In these cases, appropriately conservative assumptions are typically used, and wherever possible these models are validated/benchmarked against external data.

Retail PD models

Application and behavioural scorecards are most commonly used for retail PD modelling:

- application scorecards are derived from historically observed performance of new clients. They are built using customer demographic and financial information, supplemented by credit bureau information where available. Through statistical techniques, the relationship between these candidate variables and the default marker is quantified to produce output scores reflecting a PD. These scores are used primarily for new customer decisioning but are, in some cases, also used to allocate a PD to new customers for the purpose of capital calculation.
- behavioural scorecards differ from application scorecards in that they rely on the historically observed performance of existing clients. The statistically derived output scores are used for existing customer management activities as well as for the purpose of capital calculation.

Retail LGD models

Retail LGD models are built using bespoke methods chosen to best model the operational recovery process and practices. In a number of secured portfolios, LGD drivers are parameterised with market factors (e.g. house price indices, haircut of the property value) to capture market trends. For most unsecured portfolios, where recoveries are not based on collateral, statistical models of cash flows are used to estimate ultimate recoveries and LGDs. In all instances, cash flows are discounted to the point of default by using bespoke country and product level factors. For capital calculations, customised economic downturn adjustments, taking into account loss and default dependency, are made to adjust losses to stressed conditions.

Retail CF models

CF models within retail portfolios are split into two main methodological categories. The general methodology is to derive product level credit conversion factors (CCFs) from historical balance migrations, typically for amortising product, such as mortgages, consumer loans. These are frequently further segmented at a bucket level (e.g. by delinquency). The most sophisticated CF models are based on behavioural factors, determining customer level CCFs from characteristics of the individual facility, typically for overdrafts and credit cards. For capital calculations, customised downturn adjustments, taking into account loss and default dependency, are made to adjust for stressed conditions.

Management of credit risk and the internal ratings-based approach

The control mechanisms for the rating system

Model risk is a risk managed under the ERMF. Consequently, Barclays Group Model Risk Policy (GMRP) and its supporting standards covering the end-to-end model life cycle are in place to support the management of risk models.

Key controls captured by the GMRP cover:

- model governance is anchored in assigning accountabilities and responsibilities to each of the main stakeholders:
 - model owner – each model must have an owner who has overall accountability for the model
 - model developers – support the model owner and drive development according to the model owner's defined scope/purpose
 - Independent Validation Unit (IVU) – responsible for independent review, challenge and approval of all models.
- externally developed models are subject to the same governance standards as internal models
- models are classified by materiality (high/low) and complexity (complex/non-complex)
- all models must be validated and approved by IVU before initial implementation/use
- models are subject to annual review by the model owner and periodic validation and approval by IVU
- all models must be recorded in Barclays Group Models Database (GMD), which records model owners and developers
- model owners must evidence that model implementation is accurate and tested.

If a model is found to perform sub-optimally, it may be rejected and/or subjected to a Post Model Adjustment (PMA) before approval for continued use is granted.

The IVU reporting line is separate from that of the model developers. IVU is part of Model Risk Management (MRM), and the head of MRM reports to Barclays' Chief Risk Officer (GCRO). The model development teams have separate reporting lines to the Barclays UK and Barclays International Chief Risk Officers, who in turn report to the GCRO.

Under the Three Lines of Defence approach stated in the ERMF, the actions of all parties with responsibilities under the GMRP are subject to independent review by Barclays Internal Audit.

Validation processes for credit exposures

Validation of credit models covers observed model performance but also the scope of model use, interactions between models, data use and quality, the model's theoretical basis, regulatory compliance and any remediation to model risk that are proposed or in place. The following sections provide more detail on processes for validating the performance of each model type.

Wholesale PD models

To assess model calibration, the IVU compares the model prediction of default frequency to the realised internal default rate both over the latest year and over all observable model history. Due to the relative infrequency of default of large wholesale obligors, a long-run perspective on default risk is vital. Default rates are also compared to external benchmarks where these are relevant and available, such as default rates in rating-agency data. In practice, since financial crises have been infrequent, IVU would expect the model PD used in calculating regulatory capital to exceed the long run observed default rate.

For portfolios where few internal defaults have been observed, portfolio PD is compared to the 'most prudent PD' generated by the industry-standard Pluto-Tasche method, using conservative parameter assumptions.

To assess model discrimination performance, the IVU compares the rank-ordering of internal ratings with the pattern of defaults, if any, to construct the industry-standard Gini statistic or similar. The ordering of internal ratings is also compared to the ordering of internal and external comparator ratings where these are available.

Measures of grade stability and the degree to which PD tracks default rates over time are also routinely calculated to infer relevant aspects of the model performance (i.g. rating philosophy).

Wholesale LGD models

To assess model calibration, model outputs are compared to the LGD observed on facilities that entered default in 'downturn' periods, as requested by the regulator. Both internal and external data on observed LGD are examined, but preference is given to internal data, since these reflect Barclays' recovery policies. Comparisons are performed by product seniority and security status and for other breakdowns of the portfolio. Model outputs are also compared to the long-run average of observed LGD. The time-lapse between facility default and the closure of recovery is varied and may be long. In the construction of observed LGD, recoveries are discounted back to the date of default at a conservative interest rate, following regulatory guidance of at least 9%. As noted above, regulatory floors are in place for the LGD used in calculating regulatory capital for exposure types where few default observations are available.

To assess model discrimination, the IVU compares the rank-ordering of model predictions to that of observed LGD and calculates the Spearman's Rank correlation coefficient and other measures of discrimination.

Wholesale CF models

To assess model calibration, the conversion factors observed in internal data are compared to model predictions, both in downturn periods as defined by the regulator, and on a long-run average basis. Comparisons are performed separately for different product types. Validation focuses on internal data, with external data used as a benchmark, because conversion factors are related to banks' facility management practices. Particular care is used in separating cases where facility limits changed between the date of observation and default, as these can lead to measurements of conversion factors that take extreme values. As a benchmark only, total predicted exposure at default for all defaulted facilities is compared to realised exposure at default. This comparison is done because it is relatively insensitive to extreme values for observed CF on some facilities. The primary validation tests are performed on facility-weighted rather than exposure-weighted basis, however, in line with the relevant regulations.

Retail PD models

To assess rating philosophy, i.e. whether it is a Point-in-Time system or Through-the-Cycle system, the IVU produces migration indices to investigate relevant grade migration.

To assess model calibration, the IVU compares the model prediction of default frequency to the realised internal default rate by grade/pool as required by CRR. As a minimum, IVU expects the expected default rate is at least equal or above the level of observed default rate.

To assess model discrimination performance, the IVU compares the rank-ordering of internal ratings with the pattern of defaults, if any, to construct the industry-standard Gini statistic or similar.

To assess model stability, the population distribution, the character distribution and parameter estimates are assessed individually.

A 0.03% regulatory floor is in place for the facility level PD used in calculating regulatory capital.

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Retail LGD models

LGD model components are compared to observed value respectively, this may include but not limited to probability of possession/charge off, forced sale discount, time from default to crystallisation and discount rate. Where components are similar to PD in nature, the approach stated in the PD section applies to assess the calibration, discrimination and stability of the component.

The calibration of the overall LGD is assessed through the expected against actual comparison by default flow and stock population respectively. The downturn LGD appropriateness is further assessed to test that the downturn LGD is equal to or above the long-run average of observed LGD. This exercise is performed at grade/pool level according to CRR. In the construction of observed LGD, recoveries are discounted back to the date of default at a conservative interest rate, following regulatory guidance. As noted above, regulatory floors are in place for the LGD used in calculating regulatory capital where appropriate (this includes but not limited to the non-zero LGD floor at account level, the collateral uncertainty consideration, the portfolio level LGD floor and UK property haircut floor).

The primary validation tests are performed on facility-weighted rather than exposure-weighted basis, however, in line with the relevant regulations.

Retail CF models

The calibration of the overall CF is assessed through the expected against actual comparison by default flow and stock population respectively. The downturn CF appropriateness is further assessed to test that the downturn CF is equal to or above the long-run average of observed CF. This exercise is performed at grade/pool level according to CRR. Particular care is used in separating cases where facility limits changed between the date of observation and default, as these can lead to measurements of conversion factors that take extreme values.

Depending on the modelling approach, the relevant measure used for PD/LGD may be used accordingly to assess calibration, discrimination and stability.

CF is floored so that the exposure at the point of default cannot be less than exposure observed at point of regulatory reporting.

The primary validation tests are performed on facility-weighted rather than exposure-weighted basis, however, in line with the relevant regulations.

Table 92 for credit risk model characteristics shows modelled variables to calculate RWAs (PD, LGD, and EAD) at portfolio level, with number of models and their significance in terms of RWAs, model method or approach, numbers of years of data used, Basel asset class of the customer or client, and regulatory thresholds applied.

Selected features of material models

The table below contains selected features of the Group's AIRB credit risk models which are used to calculate RWAs. Please note that the RWAs reported in this table are based on the models in production as of Nov'18.

- PD models listed in the table account for £105bn of total AIRB approach RWAs
- LGD models listed in the table account for £106bn of total AIRB approach RWAs.

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Table 93: IRB credit risk models' selected features

Component modelled	Portfolio	Size of associated portfolio (RWAs)		Model description and methodology	Number of years loss data	Basel asset classes measured	Applicable industry-wide regulatory thresholds
		BUK (£m)	BI (£m)				
PD	Publicly traded corporate	0	24,811	Statistical model using a Merton-based methodology. It takes quantitative factors as inputs.	> 10 Years	Corporate	PD floor of 0.03%
PD	Customers rated by Moody's and S&P	0	29,886	Rating Agency Equivalent model converts agency ratings into estimated equivalent PIT default rates using credit cycles based on Moody's data.	> 10 Years	Corporate, Financial Institutions and Sovereigns	PD floor of 0.03% for corporate and institutions
PD	SME customers with turnover < £20m	5,489	2,926	Statistical models that uses regression techniques to derive relationship between observed default experience and a set of behavioral variables.	> 10 Years	Corporate SME, SME	Regulatory PD floor of 0.03%
PD	Corporate customers with turnover >= £20m	0	7,171	Statistically derived models sourced from an external vendor (Moody's RiskCalc)	> 10 Years	Corporate	PD floor of 0.03%
PD	Home Finance	17,280	–	Statistical scorecards estimated using regression techniques, segmented along arrears status and portfolio type.	>10 Years	Secured By Real Estate (residential and buy-to-let mortgages)	Regulatory PD floor of 0.03%
PD	Barclaycard UK	17,044	–	Statistical scorecards estimated using regression techniques, segmented along arrears status and portfolio type.	6 – 10 Years	Qualifying Revolving Retail (QRRE)	PD floor of 0.03%
LGD	Corporate and Financial Institutions	–	46,318	Model based on a statistical regression that outputs a long run average LGD by estimating the expected value of recovery. Inputs include industry, seniority, instrument, collateral and country.	> 10 Years	Corporate, Financial Institutions	LGD floor of 45% based on low default portfolio criteria
LGD	All business customers (excluding certain specialized sectors)	5,080	16,565	Model is based on a function estimated using actual recoveries experience. It takes account of collateral value and an allowance for non-collateral recovery.	> 10 Years	Corporate	LGD floor of 5%
LGD	UK Home Finance	17,280	–	Data driven estimates of loss and probability of possession	6 – 10 Years	Secured By Real Estate (residential and buy-to-let mortgages)	The portfolio average downturn LGD is floored at 10%
LGD	Barclaycard UK	17,044	–	Statistical models combining segmented regression and other forecasting techniques	6 – 10 Years	Qualifying Revolving Retail (QRRE)	–

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Credit Risk IRB models performance back testing - estimated versus actual

The following tables compare the PDs and LGDs estimated by the Group's IRB models with the actual default and loss rates.

Comparisons are based on the assets in IRB approach portfolios and are used to assess performance of the models. The estimates and actual figures represent direct outputs from the models rather than outputs used in regulatory capital calculations that may be adjusted to apply more conservative assumptions.

Back testing results are reported within each IRB exposure class at overall Bank level both for Retail and Wholesale, as the historical BUK and BI split is not available for the Wholesale obligors. We intend to report back testing results at BUK and BI level in future once adequate data history is available.

Risk models are subject to the Group Model Risk Policy which contains detailed guidance on the minimum standards for model risk management. For example, PDs must be estimated over a sufficient period, show sufficient differentiation in predictions for different customers, show conservatism where data limitations exist, and follow prescriptive techniques. These standards are achieved via an independent validation process through appropriately independent experts. Once validated and correctly implemented, models are subject to regular monitoring to ensure they can still be used. Comparing model estimates with actual default rates for PD and loss rates for LGD form part of this monitoring. Such analysis is used to assess and enhance the performance of the models.

Further detail is provided in the management of model risk on page 186.

PD measures

- The model estimated PIT PDs are compared with the actual default rates by PD ranges within each IRB exposure class. PD ranges, estimated PDs and actual default rates are based on the existing models default definitions. UK Cards, UK Home Finance, SME are the only CRD IV compliant portfolio as of the reference month (Nov'17), for the remaining portfolios CRD IV compliant models are either implemented post the reference month or under implementation or currently under development/approval as per the CRD IV roll out plan agreed with the PRA.
- The estimated PDs are forward-looking average PD by the model at the beginning of the twelve-month period, i.e. average PD of the Nov'17 non-defaulted obligors including inactive and non-borrowers. Both EAD weighted and simple average PDs have been reported.
- The estimated PDs are compared with the simple average of historical annual default rates over the past 5 years, starting Nov'13.
- The PIT PD is used as a predicted measure in internal monitoring and annual validation of the models. In contrast, the capital calculation uses TTC or Regulatory PDs (not shown below), calibrated to long-run default averages with additional adjustments where modelled outputs display evidence of risk understatement (including credit expert overrides, regulatory adjustments etc.). The PIT measure is subject to under or over prediction depending on the relative position of the portfolio to the credit cycle.
- A mapping has been provided between external ratings and internal PD ranges based on the published reports from the two rating agencies - Moody's and S&P.
- For the wholesale models, the average default probabilities in the tables have been determined from the full scope of clients graded by the IRB model suite, which may include some clients that have either zero exposure or zero limits marked at the time of calculation.

LGD measures

- The model estimated LGDs, unadjusted for regulatory floors and for downturn adjustments, are compared with the actual LGDs within each IRB exposure class.
- The estimated LGDs are derived from a simple average of LGDs at the time of default for the set of cases closed over the previous twelve months.
- The actual LGD rate is the simple average observed loss rate for the set of cases closed over the previous twelve months, regardless of the time of default.
- The LGD measures are used as a predicted measure in internal monitoring and annual validation of the models. The capital calculation uses Downturn LGDs with additional adjustments and regulatory floors where modelled outputs display evidence of risk understatement.

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Table 94: Analysis of expected performance versus actual results

This table provides an overview of credit risk model performance, assessed by the analysis of average PDs and average LGDs.

The table compares the raw model output to the actual experience in our portfolios. Such analysis is used to assess and enhance the adequacy and accuracy of models. The raw outputs are subject to a number of adjustments before they are used in the calculation of capital, for example to allow for the position in the credit cycle and the impact of stress on recovery rates.

Asset Class	EBA PD Range (%)	External Ratings Equivalent		Weighted Average PD %	Arithmetic Average PD by obligors %	Number of obligors		Defaulted obligors in the year £m	of which: new defaulted in the year £m	Average historical annual default %
		Moody's	S&P			As at Nov'17 £m	As at Nov'18 £m			
Wholesale governments or central banks	0.00 to <0.15	Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1, Baa2	AAA, AA+, AA, A+, A, A-, BBB+	0.01%	0.04%	57	43	0	0	0.00%
	0.15 to <0.25	Baa2, Baa3	BBB+, BBB	0.17%	0.18%	4	8	0	0	0.00%
	0.25 to <0.50	Baa3, Ba1	BBB, BBB-	0.28%	0.37%	7	4	0	0	0.00%
	0.50 to <0.75	Ba1, Ba2	BBB-, BB+	0.00%	0.62%	4	2	0	0	0.00%
	0.75 to <2.50	Ba2, Ba3, B1	BB, BB-	1.15%	1.36%	7	9	0	0	0.00%
	2.50 to <10.00	B1, B2, B3	BB-, B+, B	3.39%	4.48%	9	10	0	0	0.00%
	10.00 to <100.00	B3, Caa1, Caa2, Caa3, Ca, C	B, B-, CCC+, CCC, CCC-, CC+, CC, C	0.00%	20.76%	4	5	0	0	0.00%
	100.00 (default)	D	D	100.00%	100.00%	-	-	-	-	-
Institutions	0.00 to <0.15	Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1, Baa2	AAA, AA+, AA, A+, A, A-, BBB+	0.03%	0.03%	9,156	8,641	0	0	0.00%
	0.15 to <0.25	Baa2, Baa3	BBB+, BBB	0.17%	0.18%	909	623	0	0	0.00%
	0.25 to <0.50	Baa3, Ba1	BBB, BBB-	0.37%	0.42%	417	380	0	0	0.00%
	0.50 to <0.75	Ba1, Ba2	BBB-, BB+	0.60%	0.60%	53	86	0	0	0.00%
	0.75 to <2.50	Ba2, Ba3, B1	BB, BB-	1.27%	1.26%	223	199	0	0	0.00%
	2.50 to <10.00	B1, B2, B3	BB-, B+, B	3.93%	4.73%	141	152	1	0	0.29%
	10.00 to <100.00	B3, Caa1, Caa2, Caa3, Ca, C	B, B-, CCC+, CCC, CCC-, CC+, CC, C	11.78%	22.17%	46	57	0	0	0.48%
	100.00 (default)	D	D	100.00%	100.00%	15	9	0	-	-
Corporate	0.00 to <0.15	Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1, Baa2	AAA, AA+, AA, A+, A, A-, BBB+	0.02%	0.05%	1,430	1,365	1	0	0.06%
	0.15 to <0.25	Baa2, Baa3	BBB+, BBB	0.20%	0.20%	375	353	0	0	0.05%
	0.25 to <0.50	Baa3, Ba1	BBB, BBB-	0.34%	0.35%	622	584	3	0	0.22%
	0.50 to <0.75	Ba1, Ba2	BBB-, BB+	0.58%	0.62%	375	251	1	0	0.25%
	0.75 to <2.50	Ba2, Ba3, B1	BB, BB-	1.38%	1.39%	763	601	5	0	0.60%
	2.50 to <10.00	B1, B2, B3	BB-, B+, B	3.76%	4.27%	1,061	436	5	0	1.84%
	10.00 to <100.00	B3, Caa1, Caa2, Caa3, Ca, C	B, B-, CCC+, CCC, CCC-, CC+, CC, C	16.32%	20.19%	311	90	7	0	6.21%
	100.00 (default)	D	D	100.00%	100.00%	165	128	-	-	-
Corporate SME	0.00 to <0.15	Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1, Baa2	AAA, AA+, AA, A+, A, A-, BBB+	0.06%	0.08%	705	13,346	3	2	0.20%
	0.15 to <0.25	Baa2, Baa3	BBB+, BBB	0.19%	0.19%	1,483	4,236	3	1	0.16%
	0.25 to <0.50	Baa3, Ba1	BBB, BBB-	0.34%	0.35%	2,764	6,202	9	3	0.45%
	0.50 to <0.75	Ba1, Ba2	BBB-, BB+	0.63%	0.62%	2,090	3,154	7	2	0.62%
	0.75 to <2.50	Ba2, Ba3, B1	BB, BB-	1.36%	1.39%	3,723	5,061	17	4	1.08%
	2.50 to <10.00	B1, B2, B3	BB-, B+, B	5.11%	4.71%	3,769	2,985	32	2	3.49%
	10.00 to <100.00	B3, Caa1, Caa2, Caa3, Ca, C	B, B-, CCC+, CCC, CCC-, CC+, CC, C	20.95%	20.17%	510	766	19	3	10.32%
	100.00 (default)	D	D	100.00%	100.00%	178	692	-	-	-
Specialist Lending	0.00 to <0.15	Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1, Baa2	AAA, AA+, AA, A+, A, A-, BBB+	0.08%	0.08%	28	39	0	0	0.00%
	0.15 to <0.25	Baa2, Baa3	BBB+, BBB	0.20%	0.19%	31	11	0	0	0.00%
	0.25 to <0.50	Baa3, Ba1	BBB, BBB-	0.29%	0.33%	153	57	0	0	0.00%
	0.50 to <0.75	Ba1, Ba2	BBB-, BB+	0.59%	0.63%	140	38	0	0	0.45%
	0.75 to <2.50	Ba2, Ba3, B1	BB, BB-	0.90%	0.90%	211	138	0	0	0.09%
	2.50 to <10.00	B1, B2, B3	BB-, B+, B	3.88%	6.41%	117	138	0	0	2.02%
	10.00 to <100.00	B3, Caa1, Caa2, Caa3, Ca, C	B, B-, CCC+, CCC, CCC-, CC+, CC, C	0.00%	0.00%	6	30	0	0	11.82%
	100.00 (default)	D	D	100.00%	100.00%	45	25	-	-	-

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Table 94: Analysis of expected performance versus actual results continued

Asset Class		External Ratings Equivalent		Weighted Average PD %	Arithmetic Average PD by obligors %	Number of obligors		Defaulted obligors in the year £m	of which: new defaulted in the year £m	Average historical annual default %
Retail	EBA PD Range (%)	Moody's	S&P			As at Nov'17 £m	As at Nov'18 £m			
SME	0.00 to <0.15	Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1	AAA, AA+, AA, AA-, A+, A, A-, BBB+	0.12%	0.06%	515,312	478,321	315	306	0.07%
	0.15 to <0.25	Baa2	BBB+, BBB	0.20%	0.20%	103,582	111,982	211	184	0.19%
	0.25 to <0.50	Baa3, Ba1	BBB, BBB-	0.37%	0.36%	126,861	130,072	418	349	0.36%
	0.50 to <0.75	Ba1, Ba2	BB+	0.62%	0.62%	74,978	76,125	480	337	0.65%
	0.75 to <2.50	Ba2, Ba3, B1	BB, BB-	1.46%	1.38%	157,513	159,157	1,906	985	1.40%
	2.50 to <10.00	B1, B2, B3	BB-, B+, B, B-	5.11%	4.58%	84,305	74,184	3,588	769	6.23%
	10.00 to <100.00	B3, Caa1, Caa2, Caa3, Ca, C	B-, CCC+, CCC, CCC-, CC+, CC, C	26.37%	25.97%	25,796	21,434	6,189	23	28.62%
	100.00 (default)	D	D	100.00%	100.00%	33,450	19,928	-	-	-
Secured by Real Estate	0.00 to <0.15	Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1	AAA, AA+, AA, AA-, A+, A, A-, BBB+	0.07%	0.08%	747,100	657,676	727	-	0.08%
	0.15 to <0.25	Baa2	BBB+, BBB	0.19%	0.19%	105,683	156,014	356	-	0.21%
	0.25 to <0.50	Baa3, Ba1	BBB, BBB-	0.34%	0.34%	53,679	72,389	332	-	0.42%
	0.50 to <0.75	Ba1, Ba2	BB+	0.60%	0.61%	10,763	14,102	126	-	0.86%
	0.75 to <2.50	Ba2, Ba3, B1	BB, BB-	1.41%	1.39%	25,084	24,772	401	-	1.61%
	2.50 to <10.00	B1, B2, B3	BB-, B+, B, B-	5.13%	5.00%	13,049	14,074	724	-	5.88%
	10.00 to <100.00	B3, Caa1, Caa2, Caa3, Ca, C	B-, CCC+, CCC, CCC-, CC+, CC, C	30.84%	30.67%	8,544	8,019	2,715	-	43.40%
	100.00 (default)	D	D	100.00%	100.00%	15,843	15,348	-	-	-
Qualifying Revolving Retail	0.00 to <0.15	Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1	AAA, AA+, AA, AA-, A+, A, A-, BBB+	0.07%	0.05%	10,874,865	11,241,723	3,705	1,083	0.03%
	0.15 to <0.25	Baa2	BBB+, BBB	0.20%	0.20%	1,814,018	1,888,241	2,918	768	0.16%
	0.25 to <0.50	Baa3, Ba1	BBB, BBB-	0.36%	0.36%	2,143,393	2,190,080	6,255	1,164	0.29%
	0.50 to <0.75	Ba1, Ba2	BB+	0.61%	0.61%	1,113,123	1,125,606	5,510	630	0.51%
	0.75 to <2.50	Ba2, Ba3, B1	BB, BB-	1.45%	1.39%	2,633,447	2,628,549	29,655	1,393	1.14%
	2.50 to <10.00	B1, B2, B3	BB-, B+, B, B-	5.08%	4.93%	1,555,954	1,578,424	70,386	1,130	4.51%
	10.00 to <100.00	B3, Caa1, Caa2, Caa3, Ca, C	B-, CCC+, CCC, CCC-, CC+, CC, C	24.11%	26.81%	507,976	501,280	135,770	102	28.18%
	100.00 (default)	D	D	100.00%	100.00%	412,355	379,893	-	-	-
Other Retail	0.00 to <0.15	Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1	AAA, AA+, AA, AA-, A+, A, A-, BBB+	0.13%	0.13%	65	98	-	-	0.72%
	0.15 to <0.25	Baa2	BBB+, BBB	0.22%	0.22%	2,429	3,289	6	-	0.74%
	0.25 to <0.50	Baa3, Ba1	BBB, BBB-	0.40%	0.40%	51,697	60,623	105	-	0.50%
	0.50 to <0.75	Ba1, Ba2	BB+	0.63%	0.63%	92,866	101,324	322	-	0.48%
	0.75 to <2.50	Ba2, Ba3, B1	BB, BB-	1.39%	1.39%	347,877	352,788	4,408	-	1.17%
	2.50 to <10.00	B1, B2, B3	BB-, B+, B, B-	4.26%	4.36%	118,375	102,064	6,160	-	4.41%
	10.00 to <100.00	B3, Caa1, Caa2, Caa3, Ca, C	B-, CCC+, CCC, CCC-, CC+, CC, C	44.57%	39.64%	26,469	25,236	11,802	-	38.35%
	100.00 (default)	D	D	100.00%	100.00%	41,964	48,818	-	-	-

Asset Class		Number of resolved cases over last one year (Dec'17 to Nov'18) £m	Predicted LGD (Simple Average) %	Actual LGD (Simple Average) %
Wholesale				
Investment Bank		49	34%	23%
Corporate Bank		39	67%	57%
Retail				
SME		6,636	80%	84%
Secured by Real Estate		1,943	4%	7%
Qualifying Revolving Retail		317,499	73%	68%
Other Retail		18,836	78%	79%

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2018 AIRB models back testing summary

Section below provides AIRB model performance summary based on the above back testing results, along with the remediation plans.

Wholesale

- The Wholesale book continues to maintain low default rates across IRB exposure classes, with no defaults observed for 'Central Governments or Central Banks'. The estimated PDs are higher (conservative) compared to actual default rates for most PD ranges within each exposure class.
- There are the two key LGD models used for the Wholesale IRB exposures. Both the LGD models overestimate (conservative) on a PIT basis.
- New PD and LGD models have been developed to comply with CRD IV requirements for the material portfolios and have been submitted to the PRA. Interim Post Model Adjustments (PMAs) are in place to address existing models' deficiencies.

For Wholesale - Investment Bank portfolio, the LGD analysis has been performed on latest one year of data available for the closed cases in period Nov'16-Nov'17, due to data unavailability in the more recent months.

The change in the Corporate SME population reflects the net impact of the movement of customers between BI and BUK, a change in model methodology that increases the number of graded customers and reporting of BUK customers that also have product exposures in BI.

For Specialist Lending, the reduction in number of obligors is largely attributable to the movement of obligors between BI and BUK.

Retail SME

- For SME, a new set of CRD IV compliant models approved by the PRA were implemented in Sep'17. The models were later split based on legal entities (BUK and BI) spanning SME and Corporate SME respectively. The split into BUK and BI prior to Structural Reform Program (SRP) is based on a proxy of Sales Turnover < 6.5m and updated post SRP implementation in Apr'18, leading to an increase in obligors for Corporate SME. Oct'18 data has been used instead of Nov'18, due to data unavailability. Historical average has been calculated using 4 years of data i.e. Oct'14, Oct'15, Oct'16 and Oct'17.
- The estimated PDs rank order the historical default experience for both the SME and Corporate SME book (except the first PD range), i.e. higher PDs implying higher actual default rates. LGD model underestimates for SME on a PIT basis primarily due to few operational issues affecting underlying data.

Secured by Real Estate

- This covers the Mortgage portfolios for UK and Italy. Rank ordering is maintained across PD ranges.
- For UK Mortgages, current back testing report is based on the latest CRD IV complaint models. The PD model underestimates shows non-conservatism at an overall level (0.43% expected vs. 0.49% actual). This is due to the data issue identified in Aug'18, which caused arrear inflation. The portfolio maintains low LGD and the LGD model underestimates (0.96% estimated vs. 1.68% actual). LGD underestimation is caused by increasing Forced Sale Discount for the current year and lower expected Probability of Possession given Default (PPD), which is a major component in the expected LGD calculation for the new to default book on which numbers have been reported.
- 5 year averages of actual defaults are taken from 5 snapshot months of which Nov'13, Nov'14 are based on older generation of models and Nov'15, Nov'16 & Nov'17 are based on CRD IV complaint models (G4).
- For accounts where actual sale cost was not available, an average sale cost is used while calculating Actual LGD.
- G4 PPD model was developed on the total default population base whereas this analysis is done at the point of collaterals entering into default. The total default base contains a mixed set of collaterals, ranging from recent defaults to the ones in default for a longer time. We expect the predicted PPD (and hence LGD as well) for collaterals defaulting at any month to be lower compared to the total default base.
- For Italy Mortgages, both the PIT PD and LGD models are underestimates primarily due to a decrease in the House Price Index (HPI). A new set of CRD IV compliant models is due for regulatory submission in Q4'19. Interim Post Model Adjustments (PMAs) are in place to address existing models' deficiencies. Oct'18 data has been used instead of Nov'18 due to data challenges.

Qualifying Revolving Retail

- This constitutes UK Cards, Germany Cards and UK Current Account portfolios. The estimated PDs rank order well across all 3 portfolios and at an overall level.
- For UK Cards, a slight underestimation is observed in the PD model driven by the high risk bands; 2.27% estimated vs. 2.35% actual at an overall level. However an additional layer of conservatism is applied through Regulatory PD buffers in the capital calculation, so overall PD is still conservative. The LGD model is conservative with an overestimation (71.1% estimated vs. 65.4% actual). The existing CRD IV model suite has been re-calibrated to further improve its accuracy and submitted for PRA approval in Q2'17.

- For Germany Cards, the PD model overestimates (1.23% estimated vs. 1.14% actual) at an overall level. The overestimation in the LGD model (84% estimated vs. 69% actual) is primarily driven by debt sale at a better price. A new set of CRD IV compliant models is currently under development and is due for regulatory submission by Dec'19. Interim Post Model Adjustments (PMAs) are in place to address existing models' deficiencies.
- For Current Account, a new set of CRD IV compliant models has been approved by the PRA and implemented in Jul'18. However, the current back testing report is based on the models which were in production as of Nov'17. PD model overestimates primarily due to a decrease in actual default rates over the last year (0.67% estimated vs. 0.45% actual). The LGD model marginally overestimates (81.54% estimated vs. 79.21% actual).

Other Retail

- This covers UK Barclayloans portfolio. A new CRD IV compliant capital suite was approved by PRA in Sep'18. The new models will go live when additional work to align the forbearance definitions with the EBAs new definitions is complete. This backtesting report is based on the models currently in production.
- The PD rank ordering does not hold true for a few bands, and the model underestimates (3.33% estimated vs. 3.56% actual) at an overall level. The LGD model also marginally underestimates (77.80% expected vs. 78.85% actual) at an overall level.

Management of credit risk mitigation techniques and counterparty credit risk

Counterparty credit risk arises from derivatives and similar contracts. This section details the specific aspects of the risk framework related to this type of credit risk. As credit risk mitigation is one of the principal uses of derivative contracts by banks, this is also discussed in this section.

- On page 161, a high level description of the types of exposures incurred in the course of Barclays' activity supplements the analytical tables in pages 96 to 114.
- Mitigation techniques specific to counterparty credit risk are also discussed.

Management of credit risk mitigation techniques and counterparty credit risk

Credit risk mitigation

Barclays Group employs a range of techniques and strategies to actively mitigate credit risks. These can broadly be divided into three types:

- netting and set-off
- collateral
- risk transfer.

Barclays Group has detailed policies in place to maintain that credit risk mitigation is appropriately recognised and recorded. The recognition of credit risk mitigation is subject to a number of considerations including legal certainty of enforceability and effectiveness, that the valuation and liquidity of the collateral is adequately monitored, and that the value of the collateral is not materially correlated with the credit quality of the counterparty.

All three types of credit risk mitigation may be used by different areas of Barclays Group for exposures with a full range of counterparties. For instance, businesses may take property, cash or other physical assets as collateral for exposures to retailers, property companies or other client types.

Netting and set-off

In most jurisdictions and within legal entities in which Barclays Group operates, credit risk exposures can be reduced by applying netting and set-off. In exposure terms, this credit risk mitigation technique has the largest overall impact on net exposure to derivative transactions, compared with other risk mitigation techniques.

For derivative transactions, Barclays Group's normal practice is, on a legal entity basis, to enter into standard master agreements with counterparties (e.g. ISDAs). These master agreements typically allow for netting of credit risk exposure to a counterparty resulting from derivative transactions against the obligations to the counterparty in the event of default, and so produce a lower net credit exposure. These agreements may also reduce settlement exposure (e.g. for foreign exchange transactions) by allowing payments on the same day in the same currency to be set-off against one another.

Under IFRS, netting is permitted only if both of the following criteria are satisfied:

- the entity currently has a legally enforceable right to set off the recognised amounts
- the entity intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously.

Under US GAAP, netting is also permitted, regardless of a currently legally enforceable right of set-off and/or the intention to settle on a net basis, where there is a counterparty master agreement that would be enforceable in the event of bankruptcy.

Collateral

Barclays Group has the ability to call on collateral in the event of default of the counterparty, comprising:

- **home loans:** a fixed charge over residential property in the form of houses, flats and other dwellings. The value of collateral is impacted by property market conditions which drive demand and therefore value of the property. Other regulatory interventions on ability to repossess, longer period to repossession and granting of forbearance may also affect the collateral value.
- **wholesale lending:** a fixed charge over commercial property and other physical assets, in various forms.
- **other retail lending:** includes charges over motor vehicle and other physical assets; second lien charges over residential property, which are subordinate to first charges held either by Barclays Group or another party; and finance lease receivables, for which typically Barclays Group retains legal title to the leased asset and has the right to repossess the asset on the default of the borrower.
- **derivatives:** Barclays Group also often seeks to enter into a margin agreement (e.g. Credit Support Annex) with counterparties with which Barclays Group has master netting agreements in place. These annexes to master agreements provide a mechanism for further reducing credit risk, whereby collateral (margin) is posted on a regular basis (typically daily) to collateralise the mark to market exposure of a derivative portfolio measured on a net basis. Barclays Group may additionally negotiate the receipt of an independent amount further mitigating risk by collateralising potential mark to market exposure moves.
- **reverse repurchase agreements:** collateral typically comprises highly liquid securities which have been legally transferred to Barclays Group subject to an agreement to return them for a fixed price.
- **financial guarantees and similar off-balance sheet commitments:** cash collateral may be held against these arrangements.

Risk transfer

A range of instruments including guarantees, credit insurance, credit derivatives and securitisation can be used to transfer credit risk from one counterparty to another. These mitigate credit risk in two main ways:

- if the risk is transferred to a counterparty which is more creditworthy than the original counterparty, then overall credit risk is reduced
- where recourse to the first counterparty remains, both counterparties must default before a loss materialises. This is less likely than the default of either counterparty individually so credit risk is reduced.

Risk transfer can also be used to reduce risk concentrations within portfolios lowering the impact of stress events.

Risk transfer transactions are undertaken with consideration to whether the collateral provider is correlated with the exposure, the credit worthiness of the collateral provider and legal certainty of enforceability and effectiveness. Where credit risk mitigation is deemed to transfer credit risk, this exposure is appropriately recorded against the credit risk mitigation provider.

In exposure terms, risk transfer is used most extensively as a credit risk mitigation technique for wholesale loans and derivative financial instruments.

Off-balance sheet risk mitigation

Barclays Group applies fundamentally the same risk management policies for off-balance sheet risks as it does for its on-balance sheet risks. In the case of commitments to lend, counterparties/ customers will be subject to the same credit management policies as for loans and advances. Collateral may be sought depending on the strength of the counterparty and the nature of the transaction.

Recognition of credit risk mitigation in capital calculations

Credit risk mitigation is used to reduce credit risk associated with an exposure, which may reduce potential losses in the event of obligor default or other specified credit events.

Credit risk mitigation that meets certain regulatory criteria may be used to improve risk parameters and reduce RWA consumption against a given obligor. Collateral that meets these regulatory conditions is referred to as eligible collateral. Eligibility criteria are specified in articles 195 to 204 of the Capital Regulations Requirement (CRR).

Barclays Group's policies and standards set out criteria for the recognition of collateral as eligible credit risk mitigation and are designed to be fully consistent with all applicable local regulations and regulatory permissions.

Where regulatory capital is calculated under AIRB regulations, the benefit of collateral is generally taken by adjusting LGDs. For standardised portfolios, the benefit of collateral is taken using the financial collateral comprehensive method: supervisory volatility adjustments approach.

For instruments that are deemed to transfer credit risk, in AIRB portfolios the protection is generally recognised by using the PD and LGD of the protection provider.

For exposures treated under the standardised approach, the impact of eligible credit risk mitigation is primarily recognised by reducing the EAD associated with the exposure that benefits from the mitigation.

Management of credit risk mitigation techniques and counterparty credit risk

Managing concentrations within credit risk mitigation

Credit risk mitigation taken by Barclays Group to reduce credit risk may result in credit or market risk concentrations.

Guarantees that are treated as eligible credit risk mitigation are marked as an exposure against the guarantor and aggregated with other credit exposure to the guarantor. Limit monitoring at the counterparty level is then used for monitoring of concentrations in line with Barclays Group policy.

Commercial real estate lending is another potential source of concentration risk arising from the use of credit risk mitigation. The portfolio is regularly reviewed to assess whether a concentration in a particular region, industry or property type exists, and portfolio limits are in place to control the level of exposure to commercial, residential, investment and development activity. See page 161 for more information on collateral, valuation and monitoring of concentrations.

Counterparty credit risk

Derivative counterparty credit exposures

Barclays Group enters into financial instruments that are traded or cleared on an exchange, including interest rate swaps, futures and options on futures. Holders of exchange traded instruments provide daily margins with cash or other securities at the exchange, to which the holders look for ultimate settlement.

Barclays Group also enters into financial instruments that are traded over the counter, rather than on a recognised exchange. These instruments range from standardised transactions in derivative markets, to trades where the specific terms are tailored to the requirements of Barclays Group's counterparties. In most cases, industry standard documentation is used, most commonly in the form of a master agreement, with individual transaction confirmations. The existence of a signed master agreement is intended to give Barclays Group protection in situations where Barclays Group's counterparty is in default.

Counterparty credit exposure arises from the risk that parties are unable to meet their payment obligations under certain financial contracts such as derivatives, securities financing transactions (e.g. repurchase agreements), or long settlement transactions.

A Monte Carlo simulation engine is used to estimate the Potential Future Exposure (PFE) to derivative and securities financing counterparties. The exposure simulation model simulates future market states and the MTM of the derivative transactions under those states. Simulated exposures including the effect of credit mitigants such as netting, collateral and mandatory break clauses can then be generated.

Credit limits for CCR are assessed and allocated using the PFE measure. A number of factors are taken into account when setting credit limits for individual counterparties, including but not limited to the credit quality and nature of the counterparty, the rationale for the trading activity entered into and any wrong-way risk considerations.

The expected exposures generated by this engine are also used as an input into both internal and regulatory capital calculations covering CCR.

'Wrong-way risk' in a trading exposure arises when there is significant correlation between the underlying asset and the counterparty, which in the event of default would lead to a significant MTM loss to the counterparty. Specific wrong-way risk trades, which are self-referencing or reference to other entities within the same counterparty group, require approval by a senior credit officer. The exposure to the counterparty will reflect the additional risk generated by these transactions.

Derivative CCR (credit value adjustments)

As Barclays Group participates in derivative transactions it is exposed to CCR, which is the risk that a counterparty will fail to make the future payments agreed in the derivative contract. This is considered as a separate risk to the volatility of the MTM payment flows. Modelling this counterparty risk is an important part of managing credit risk on derivative transactions.

The counterparty risk arising under derivative transactions is taken into account when reporting the fair value of derivative positions. The adjustment to the value is known as credit value adjustment (CVA). It is the difference between the value of a derivative contract with a risk-free counterparty and that of a contract with the actual counterparty. This is equivalent to the cost of hedging the counterparty risk in the Credit Default Swap (CDS) market.

CVAs for derivative positions are calculated as a function of the expected exposure, which is the average of future hypothetical exposure values for a single transaction or group of transactions with the same counterparty, the credit spread for a given horizon and the LGD.

The expected exposure is calculated using Monte Carlo simulations of risk factors that may affect the valuation of the derivative transactions in order to simulate the exposure to the counterparty through time. These simulated exposures include the effect of credit mitigants such as netting, collateral and mandatory break clauses. Counterparties with appropriate credit mitigants will generate a lower expected exposure profile compared to counterparties without credit mitigants in place for the same derivative transactions.

Derivative netting and collateral arrangements

Credit risk from derivatives is mitigated where possible through netting agreements whereby derivative assets and liabilities with the same counterparty can be offset. Barclays Group policy requires all netting arrangements to be legally documented. The ISDA Master Agreement is Barclays Group's preferred agreement for documenting OTC derivatives. It provides the contractual framework within which dealing activities across a full range of OTC products are conducted, and contractually binds both parties to apply close-out netting across all outstanding transactions covered by an agreement if either party defaults or other predetermined events occur. The majority of Barclays Group's OTC derivative exposures are covered by ISDA master netting and ISDA CSA collateral agreements.

Collateral is obtained against derivative assets, depending on the creditworthiness of the counterparty and/or nature of the transaction. Any collateral taken in respect of OTC trading exposures will be subject to a 'haircut', which is negotiated at the time of signing the collateral agreement. A haircut is the valuation percentage applicable to each type of collateral and will be largely based on liquidity and price volatility of the underlying security. The collateral obtained for derivatives is predominantly either cash, direct debt obligation government (G14+) bonds denominated in the domestic currency of the issuing country, debt issued by supranationals or letters of credit issued by an institution with a long-term unsecured debt rating of A+/A3 or better. Where Barclays Group has ISDA master agreements, the collateral document will be the ISDA CSA. The collateral document must give Barclays the power to realise any collateral placed with it in the event of the failure of the counterparty.

Management of market risk

This section describes the governance structure specific to the management of market risks, as well as a discussion of measurement techniques.

- Market risks are varied, and a range of techniques must be used to manage them. From page 164 we provide an overview of the market risks we incur across Barclays Group
- The governance structure specific to market risks is discussed on page 164.

The rest of the section consists of traded and other risks:

- Market risk, the risk of Barclays Group being impacted by changes in the level or volatility of positions in the trading book, is covered on pages 165 to 170. Measurement techniques such as VaR, are discussed, as well as techniques applied when statistical techniques are not appropriate.

Barclays' approach to managing risks

Management of market risk

Market risk

The risk of loss arising from potential adverse changes in the value of the firm's assets and liabilities from fluctuation in market variables including, but not limited to, interest rates, foreign exchange, equity prices, commodity prices, credit spreads, implied volatilities and asset correlations.

Overview

Market risk arises primarily as a result of client facilitation in wholesale markets, involving market making activities, risk management solutions and execution of syndications. Upon execution of a trade with a client, Barclays Group will look to hedge against the risk of the trade moving in an adverse direction. Mismatches between client transactions and hedges result in market risk due to changes in asset prices, volatility or correlations.

Organisation and structure

Market risk in the businesses resides primarily in Barclays International and Barclays Group Treasury. These businesses have the mandate to assume market risk. Market risk oversight and challenge is provided by business Committees and Group Committees, including the Market Risk Committee.

Risk management in the setting of strategy

Appetite for market risk is recommended by the risk function to BRC for agreement by the Board. Mandate and scales are set to control levels of market risk and maintain Barclays Group remains within the BRC approved risk appetite. Barclays Group runs an annual Group-wide stress testing exercise which aims to simulate the dynamics of exposures across Barclays Group and cover all risk factors. The exercise is also designed to measure the impact to Barclays Group's fundamental business plan, and is used to manage the wider Group's strategy.

⊕ See page 142 for more detail on the role of risk in the setting of strategy.

Market risk culture

Market risk managers are independent from the businesses they cover, and their line management reports into the CRO. This embeds a risk culture with strong adherence to limits that support Group-wide risk appetite.

⊕ See page 139 for more detail on risk culture.

Management of market risk, mitigation and hedging policies

The governance structure helps maintain all market risks that Barclays Group is exposed to are well managed and understood. Traded market risk is generated primarily as a result of market making activities, syndications and providing risk management solutions to clients. Group Treasury supports the businesses in managing their interest rate risk. Positions will contribute both to market risk limits and regulatory capital if relevant. As part of the continuous monitoring of the risk profile, Market Risk meets with the businesses to discuss the risk profile on a regular basis. The outcome of these reviews includes further detailed assessments of event risk via stress testing, risk mitigation and risk reduction.

Market risk measurement – management view

Market risk management measures

A range of complementary approaches to measure market risk are used which aim to capture the level of losses that Barclays Group is exposed to due to unfavourable changes in asset prices. The primary tools to control Barclays Group's exposures are:

Measure	Description
Management Value at Risk (VaR)	An estimate of the potential loss arising from unfavourable market movements, if the current positions were to be held unchanged for one business day.
Primary stress tests	An estimate of potential losses that might arise from severe market moves or scenarios impacting key liquid market risk exposures.
Secondary stress tests	Modelled losses from unfavourable market movements to illiquid market risk exposures.
Business scenario stresses	Multi asset scenario analysis of severe, but plausible events that may impact the market risk exposures of the investment bank.

The use of Management VaR for traded market risk is broader than the application for use of VaR for regulatory capital, and captures standardised, advanced and certain banking books where market risks are deemed to exist. The wider scope of Management VaR is what Barclays Group deems as material market risk exposures which may have a detrimental impact on the performance of the trading business. The scope used in Regulatory VaR (see page 13) is narrower as it applies only to trading book positions as approved by the PRA.

Barclays PLC Board Risk Committee

- Reviews and recommends Barclays Group's risk appetite for market risk to the Barclays PLC Board
- Reviews material events impacting market risk

Barclays Group Risk Committee

- Monitors risk profile with respect to financial risk appetite
- Debates and agrees actions on the financial risk profile and risk strategy across Barclays Group
- Considers issues escalated by risk type heads and business risk directors

Barclays Group Market Risk Committee

- Reviews market risk appetite proposals from the business
- Oversees the management of Barclays Group's market risk profile
- Reviews arising market or regulatory issues
- Reviews state of the implementation of the risk frameworks in the businesses

Barclays' approach to managing risks

Management of market risk

Stress testing and scenario analysis are also an important part of the risk management framework, to capture potential risk that may arise in severe but plausible events.

Management VaR

- estimates the potential loss arising from unfavourable market movements, over one day for a given confidence level;
- differs from the Regulatory VaR used for capital purposes in scope, confidence level and horizon
- back testing is performed to evaluate that the model is fit for purpose.

VaR is an estimate of the potential loss arising from unfavourable market movements if the current positions were to be held unchanged for one business day. For internal market risk management purposes, a historical simulation methodology with a two-year equally weighted historical period, at the 95% confidence level is used for all trading books and some banking books. Risk factors driving VaR are grouped into key risk types as summarised below:

Risk factor	Description
Interest rate	Changes in the level or shape of interest rate expectations that can impact prices of interest rate sensitive assets, such as bonds and derivatives instruments, such as interest rate swaps.
Spread	Difference between bond yields and swaps rates that arises when a business has positions in both bonds and interest rate/inflation derivatives instruments. Both assets may trade at different levels but are fundamentally exposed to similar risk.
Foreign exchange	The impact of changes in foreign exchange rates and volatilities.
Equity	Risk due to changes in equity prices, volatilities and dividend yields, for example as part of market making activities, syndication or underwriting of initial public offerings.
Commodity	Arises primarily from providing hedging solutions to clients and access to financial investors via financially-settled energy derivatives exposed to changes in the level of energy spot or forward prices and their volatilities.

Risk factor	Description
Inflation	Arises from the impact of changes in inflation rates and volatilities on cash instruments and derivatives. This arises as part of market marking activities, whereby Barclays Group may be exposed to changes in inflation rates, for example, market making syndications for inflation linked securities.

Traded credit	Arises from the uncertainty of credit quality impacting prices of assets, for example positions such as corporate bonds, securitised products and credit based derivative instruments, including credit default swaps.
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Basis	The impact of changes in interest rate tenor basis (e.g. the basis between swaps vs 3M LIBOR and swaps vs 6M LIBOR) and cross-currency basis and is primarily generated as a result of market making activities.
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In some instances, historical data is not available for particular market risk factors for the entire look-back period, for example, complete historical data would not be available for our equity security following an initial public offering. In these cases, market risk managers will proxy the unavailable market risk factor data with available data for a related market risk factor.

The output of the Management VaR model can be readily tested through back testing. This checks instances where actual losses exceed the predicted potential loss estimated by the VaR model. If the number of instances is higher than expected, where actual losses exceed the predicted potential loss estimated by the VaR model, this may indicate limitations with the VaR calculation, for example, a risk factor that would not be adequately captured by the model.


The Management VaR model in some instances may not appropriately measure some market risk exposures, especially for market moves that are not directly observable via prices. Market risk managers are required to identify risks which are not adequately captured in VaR ('risks not in VaR' or 'RNIVs', discussed below).

When reviewing VaR estimates, the following considerations are taken into account:

- the historical simulation uses the most recent two years of past data to generate possible future market moves, but the past may not be a good indicator of the future
- the one-day time horizon may not fully capture the market risk of positions that cannot be closed out or hedged within one day

- VaR is based on positions as at close of business and consequently, it is not an appropriate measure for intra-day risk arising from a position bought and sold on the same day
- VaR does not indicate the potential loss beyond the VaR confidence level.

Limits are applied at the total level as well as by risk factor type, which are then cascaded down to particular trading desks and businesses by the market risk management function.

 See page 117 for a review of Management VaR in 2018.

Primary stress tests

Primary stress tests are key tools used by management to measure liquid market risks from extreme market movements or scenarios in each major trading asset class.

Stress testing provides an estimate of potential significant future losses that might arise from extreme market moves or scenarios. Primary stress tests apply stress moves to key liquid risk factors for each of the major trading asset classes, namely:

- interest rates: shock to the level and structure of interest rates and inflation across currencies
- credit: impact on traded corporate credit exposures and securities structures, including across rating grades, geography, sectors and products
- foreign exchange: impact of unfavourable moves in currency prices and volatility
- equity: shocks to share prices including exposures to specific markets and sectors
- commodities: adverse commodity price changes across both physical and derivative markets.

Primary stresses apply moves to liquid assets incorporating up to 10 days holding period. Shock scenarios are determined by a combination of observed extreme historical moves and forward looking elements as appropriate.

Primary stresses are calculated for each asset class on a standalone basis. Risk managers calculate several stress scenarios and communicate the results to senior managers to highlight concentrations and the level of exposures. Primary stress loss limits are applied across the trading businesses and is a key market risk control.

Secondary stress tests

Secondary stress tests are key tools used by management to measure illiquid market risks from extreme market movements or scenarios in each major trading asset class.

Secondary stress tests are used in measuring potential losses arising from market risks that are not captured in the primary stress tests. These may relate to financial instruments or risk exposures which are not readily or easily tradable or markets that are naturally sensitive to a rapid deterioration in market conditions.

For each asset class, secondary stresses are

Barclays' approach to managing risks

Management of market risk

aggregated to a single stress loss which allows the business to manage its liquid and illiquid risk factors. Limits against secondary stress losses are also applied, which allows Barclays Group to manage and control the level of illiquid risk factors.

Stresses are specific to the exposure held and are calibrated on both observed extreme moves and some forward-looking elements as appropriate.

Business scenario stresses

Business scenario stresses are key tools used by management to measure aggregated losses across the entire trading book as a result of extreme forward-looking scenarios encompassing simultaneous shocks to multiple asset classes.

Business scenario stresses apply simultaneous shocks to all risk factors assessed by applying changes to foreign exchange rates, interest rates, credit spreads, commodities and equities to the entire portfolio, for example, the impact of a rapid and extreme slowdown in the global economy. The measure shows results on a multi-asset basis across all trading exposures. Business scenarios are used for risk appetite monitoring purposes and are useful in identifying concentrations of exposures and highlighting areas that may provide some diversification.

The estimated impacts on market risk exposures are calculated and reported by the market risk management function on a frequent and regular basis. The stress scenario and the calibration on the shocks are also reviewed by market risk managers periodically for its relevance considering any market environment.

Scenarios focusing on adverse global recession, deterioration in the availability of liquidity, contagion effects of a slowdown in one of the major economies, easing of global growth concerns, and a historical event scenario are examples of business scenarios. If necessary, market event-specific scenarios are also calculated, such as:

- a unilateral decision to exit the Eurozone by a member country
- the impact of a large financial institution collapse, or
- a disorderly exit of quantitative easing programmes, including unexpected rapid and continuous interest rate rises as a result.

⊕ See page 117 for a review of business scenario stresses in 2018.

Market risk measurement – regulatory view

Regulatory view of traded positions

For regulatory purposes, the trading book is defined as one that consists of all positions in CRD financial instruments and commodities held either with trading intent, or in order to hedge other elements of trading, and which are either free of any restrictive covenants on their tradability, or able to be hedged. A CRD financial instrument is defined as a contract that gives rise to both a financial asset of one party and a financial liability or equity instrument of another party.

All of the below regulatory measures, including the standardised approach, generate market risk capital requirements, in line with the regulatory requirements set out in the Capital Requirements Directive ('CRD IV') and Regulation. Positions which cannot be included in the trading book are included within the banking book and generate risk capital requirements in line with this treatment.

Inclusion of exposures in the regulatory trading book

Barclays Group maintains a Trading Book Policy, which defines the minimum requirements a business must meet to run trading positions and the process by which positions are allocated to trading or banking books. Trading intent is a key element in deciding whether a position should be treated as a trading or banking book exposure.

Positions in the trading book are subject to market risk capital, computed using models where regulatory approval has been granted, otherwise the market risk capital requirement is calculated using standard rules as defined in the Capital Requirement Regulation (CRR), part of the CRD IV package. If any of the criteria specified in the policy are not met for a position, then that position must be allocated to the banking book.

Most of Barclays Group's market risk regulatory models are assigned the highest model materiality rating. Consequently, the Regulatory VaR model is subject to annual re-approval by the Independent Validation Unit. The Independent Validation Unit makes an assessment of model assumptions and considers evidence of model suitability provided by the model owner. The following table summarises the models used for market risk regulatory purposes and the applicable regulatory thresholds.

Valuation standards

CRR article 105 defines regulatory principles which need to be applied to fair value assets and liabilities, in order to determine a prudent valuation.

The Prudent Valuation Adjustment (PVA) is applied to accounting fair values where there are a range of plausible alternative valuations. It is calculated in accordance with Article 105 of the CRR, and includes (where relevant) adjustments for the following factors: unearned credit spreads, close-out costs, operational risk, market price uncertainty, early termination, investing and funding costs,

future administrative costs and model risk. The PVA includes adjustment for all fair valued financial instruments and commodities, irrespective of whether they are in the trading or banking book.

Page 291 of the annual report sets out the valuation control framework for accounting valuations and the related responsibilities of the Finance-product control valuations function and the Valuation Committee. This function and committee are also responsible for the oversight of the PVA and maintaining compliance with article 105 of the CRR.

Regulatory measures for Market risk

There are a number of regulatory measures which Barclays Group has permission to use in calculating regulatory capital (internal models approval):

Measure	Definition
Regulatory Value at Risk (VaR)	An estimate of the potential loss arising from unfavourable market movements calibrated to 99% confidence interval 10-day holding period.
Stressed Value at Risk (SVaR)	An estimate of the potential loss arising from a twelve-month period of significant financial stress calibrated to 99% confidence interval 10-day holding period.
Incremental Risk Charge (IRC)	An estimate of the incremental risk arising from rating migrations and defaults, beyond what is already captured in specific market risk VaR for the non-correlation trading portfolio. Uses a 99.9% confidence level and a one-year horizon.
Comprehensive Risk Measure (CRM)	An estimate of all the material market risk, including rating migration and default for the correlation trading portfolio.

The legal entities for which the PRA has given permission to use internal models for market risk regulatory capital are: BBPlc Trading and BCSL (consolidated), BBPlc Trading and BCSL. The legal entity for which the FRBNY has given permission to use internal models is IHC.

Barclays' approach to managing risks

Management of market risk

Regulatory VaR

- Estimates the potential loss arising from unfavourable market movements.
- Regulatory VaR differs from the management approach in the following respects.

VaR Variable	Regulatory	Management
Confidence interval	99%	95%
Scope	As approved by the regulator (PRA or FRBNY)	Management view of market risk exposures. Includes trading books and banking books exposed to price risk
Look-back period	2 years	2 years
Liquidity Horizon (holding period)	10 days	1 day

Regulatory VaR allows oversight of the total potential losses, at a given confidence level, of those trading books which received approval from the regulator to be covered via an internal model. Barclays Group uses a Regulatory VaR model that diversifies general and specific market risk for regulatory capital. Market risks are captured in the Regulatory VaR model using either full revaluation or an approximate revaluation approach depending on the type of product. When simulating potential movements in risk factors, returns are modelled using a combination of absolute changes, proportional changes or a blended mix of these two approaches.

Management VaR allows Barclays Group to supervise the total market risk across Barclays Group, including all trading books and some banking books. Management VaR is also utilised for the internal capital model (economic capital).

Regulatory VaR is fundamentally the same as the Management VaR (see page 165), with the key differences listed above. The model is complemented with RNIVs, as described on pages 169-170.

Stressed Value at Risk (SVaR)

- Estimates the potential loss arising from unfavourable market movements in a stressed environment.
- Identical to Regulatory VaR, but calibrated over a one-year stressed period.
- Regulatory capital is allocated to individual businesses. For regulatory capital calculation purposes Barclays Group computes a market risk capital requirement based on a one-day scaled to ten-day, 99% VaR metric calibrated to a period of significant financial stress. This SVaR capital requirement is added to the market risk capital requirement arising from regulatory VaR, the Incremental Risk Charge and the All Price Risk on an undiversified basis.

The SVaR model must be identical to the VaR model used by Barclays Group, with the exception that the SVaR model must be calibrated to a one-year period of significant financial stress ('the SVaR period'). Barclays Group selects the SVaR period to be a one-year period that maximises the sum of general market risk Regulatory VaR and specific market risk Regulatory VaR for

positions in scope of regulatory approval. The SVaR period is reviewed on a monthly basis or when required by material changes in market conditions or the trading portfolio.

SVaR cannot be meaningfully backtested as it is not sensitive to current market conditions. Many market risk factors with complete historical data over a two-year period may not have complete data covering the SVaR period and consequently, more proxies may be required for SVaR than for VaR. The SVaR metric itself has the same strengths and weaknesses as Barclays Group's VaR model.

Incremental Risk Charge (IRC)

- Captures risk arising from rating migrations and defaults for traded debt instruments incremental to that already captured by Regulatory VaR and SVaR.

IRC captures the risk arising from ratings migrations or defaults in the traded credit portfolio. IRC measures this risk at a 99.9% confidence level with a one-year holding period and applies to all positions in scope for specific risk including sovereign exposure.

Barclays Group's IRC model simulates default and ratings transition events for individual names. The behaviour of names is correlated with one another to simulate a systemic factor to model the possibility of multiple downgrades or defaults. The correlations between non-sovereign names are based on the Basel-defined correlations stipulated in the IRB approach to measuring credit risk capital, with a fixed correlation between sovereign names.

Barclays Group's IRC model simulates the impact of a ratings transition by estimating the improvement or deterioration in credit spreads resulting from the transition and assumes that the historically observed average change in credit spreads (measured in relative terms) resulting from ratings transitions provides an accurate estimate of likely widening or tightening of credit spreads in future transitions. For each position, the model computes the impact of spread moves up or down at pre-specified relative movements, and the actual impact is obtained by interpolating or extrapolating the actual spread move from these pre-computed values.

Barclays Group's IRC model assumes that ratings transitions, defaults and any spread increases occur on an instantaneous basis.

Comprehensive Risk Measure (CRM)


- Captures all market risks affecting the correlation trading portfolio.

CRM covers the correlation trading portfolio and is intended to adequately capture all risk factors relevant to corporate Nth-to-default (on a basket of referenced names) and tranching credit derivatives. The capital requirement is based on a 99.9% confidence interval over a one-year holding period. The model generates a scenario based on a Monte Carlo simulation and revalues the portfolio under the simulated market scenario.

The model captures the following risk factors in the correlation trading portfolio:

- default and ratings migration over a one-year time horizon
- credit spread volatility
- recovery risk: uncertainty of the recoverable value under default
- correlation risk
- basis risk: basis between credit indices and its underlying constituents
- hedge slippage: portfolio rebalancing assumption.

Barclays Group's CRM model is based on the IRC model but also captures market risks not related to transition or default events, such as movements in credit spreads or correlations. These risk factors are included as part of the Monte Carlo simulation using distributions calibrated to historically observed moves. Barclays Group's CRM model assumes that ratings transitions, defaults and any spread increases occur on an instantaneous basis. Barclays Group applies stress tests to the modelling parameters based on combinations of changes in credit spreads, correlations and default events.

 See page 118 for a review of regulatory measures in 2018.

Barclays' approach to managing risks

Management of market risk

Table 95: Market risk models selected features

Component modelled	Number of significant models and size of associated portfolio (RWAs)	Model description and methodology	Applicable regulatory thresholds
Regulatory VaR	1 model; £3.3bn	Equally-weighted historical simulation of potential daily P&L arising from market moves	Regulatory VaR is computed with ten-day holding period and 99% confidence level
SVaR	1 model; £8.9bn	Same methodology as used for VaR model, but using a different time series	Regulatory SVaR is computed with ten-day holding period and 99% confidence level
IRC	1 model; £1.9bn	Monte Carlo simulation of P&L arising from ratings migrations and defaults	IRC is computed with one-year holding period and 99.9% confidence level
CRM	1 model; £0.0bn	Same approach as IRC, but it incorporates market-driven movements in spreads and correlations for application to correlation trading portfolios.	CRM is computed with one-year holding period and 99.9% confidence level. As required in CRD IV, the CRM charge is subject to a floor set with reference to standard rules charge

Regulatory back testing

Back testing is the method by which Barclays Group checks and affirms that its procedures for estimating VaR are reasonable and serve its purpose of estimating the potential loss arising from unfavourable market movements. The back testing process is a regulatory requirement and seeks to estimate the performance of the regulatory VaR model. Performance is measured by the number of exceptions to the model i.e. actual or hypothetical P&L loss in one trading day is greater than the estimated VaR for the same trading day. Barclays Group's procedures could be underestimating VaR if exceptions occur more frequently than expected (a 99% confidence interval indicates that one exception will occur in 100 days).

Back testing is performed at a legal entity level, sub-portfolio levels and business-aligned portfolios (shown in the table below and in the charts on the next page) on Barclays Group's regulatory VaR model. Regulatory back testing compares Regulatory VaR at 99%

confidence level (one-day holding period equivalent) to actual and hypothetical changes in portfolio value as defined in CRR Article 366. The consolidated Barclays Bank PLC and Barclays Capital Securities Ltd is the highest level of consolidation for the VaR model that is used in the calculation of regulatory capital.

A back testing exception is generated when a loss is greater than the daily VaR for any given day.

As defined by the PRA, a green status is consistent with a good working VaR model and is achieved for models that have four or fewer back testing exceptions in a 250-day period. Back testing counts the number of days when a loss exceeds the corresponding VaR estimate, measured at the 99% regulatory confidence level. For the Investment Bank's regulatory DVaR model at the consolidated legal entity level, green model status was maintained for 2018 apart from the period May to October 2018 when the model status was amber.

Back testing is also performed on management VaR to validate it remains reasonable and fit for purpose.

The table below shows the VaR back testing exceptions on legal entities aligned to Barclays Group's business as at 31 December 2018. Model performance at a legal entity level determines regulatory capital within those entities. Legal entity disclosure is also relevant from a management perspective as Barclays' VaR and model performance of VaR for a legal entity across asset class are key metrics in addition to asset class metrics across legal entity.

For the Investment Bank's regulatory DVaR model at the consolidated legal entity level, green model status was maintained for 2018 apart from the period May to October.

The IHC backtesting process compares IHC 99% Regulatory VAR against Hypothetical P&L. The definition of Hypothetical P&L and the scope of Regulatory VaR for the IHC are consistent with the Federal Reserve's Market Risk Rule.

Legal Entity	Actual P&L		Hypo P&L	
	Total Exceptions	Status ^a	Total Exceptions	Status ^a
BBPlc Trading and BCSL	1	G	3	G
BBPlc Trading	2	G	4	G
BCSL	3	G	4	G
IHC	n/a	n/a	3	G

Note
a RAG status is accurate as of year-end.

Barclays' approach to managing risks

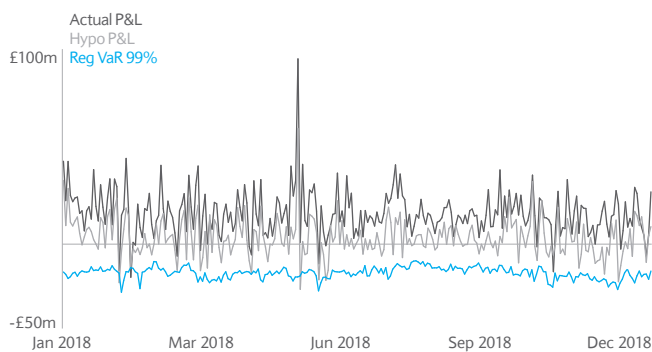
Management of market risk

The charts below show VaR for Barclays Group's regulatory portfolios aligned by legal entity. The dark blue and grey points on the charts indicate losses on the small number of days on which actual and hypo P&L respectively exceeded the VaR amount.

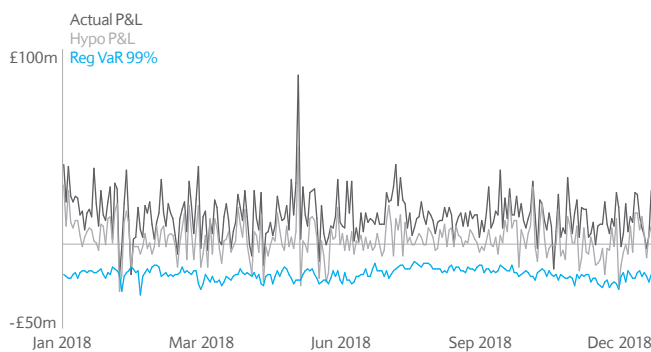
In addition to being driven by market moves in excess of the 99% confidence level, back testing exceptions can be caused by risks that impact P&L not captured directly in the VaR itself but separately captured as non VaR-type, namely Risks Not in VaR (RNIVs).

Exceptions are reported to internal management and regulators on a regular basis and investigated to evaluate the model performs as expected. Overall back testing for the consolidated legal entity remains in the green zone, suggesting that the VaR remains fit for purpose.

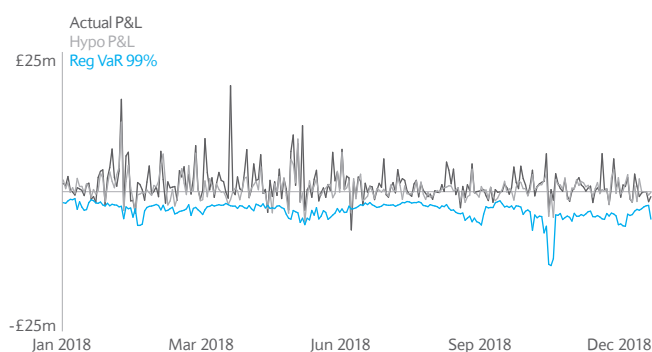
BBPlc Trading and BCSL



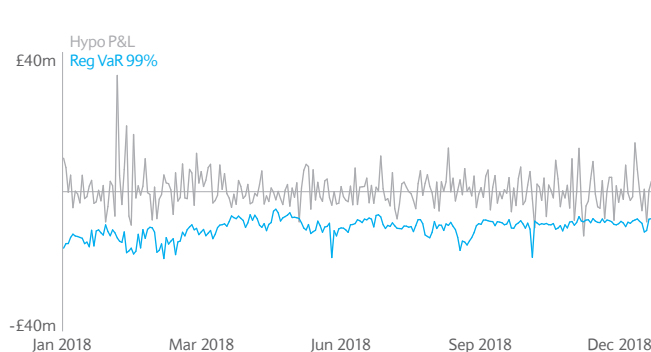
BBPlc Trading



BCSL



IHC



Management of risks not fully captured in models, including Risks not in VaR (RNIVs)

Barclays Group's risk identification process captures risks that either have been observed to, or have the capacity to, produce material losses in normal and stressed market conditions. To maintain risk coverage, the range of core risks is identified following either market convention, regulatory guidance, or the specific historical experience of Barclays Group and is considered as part of the new product processes.

In some instances, the Management and Regulatory VaR model may not appropriately measure some market risks, especially where market moves are not directly observable via prices. Barclays Group has policies to apply add-ons where risks are not captured by the model. RNIVs refer to those core risks that are not captured, or not adequately captured, in VaR and SVaR. RNIVs can include:

- risks not fully captured elsewhere and/or illiquid risk factors such as cross-risks;
- basis risks;
- higher-order risks;
- calibration parameters, for instance to model parameter uncertainty; and

- potential losses in excess of fair valuation adjustments taken in line with the Valuation Control Framework. Please see Note 17 in the Barclays PLC Annual Report 2018 'Fair value of assets and liabilities' for more details on fair value adjustments.

The treatment of RNIVs follows whether the risks are considered VaR type or non-VaR type, which depends on, and can change with, the evolving state of financial markets:

- **VaR-type RNIVs:** Typically represent risks that are not well captured in VaR, mainly because of infrastructure limitations or methodology limitations. In this instance two metrics are calculated, a VaR RNIV and a SVaR RNIV, using the same confidence level, capital horizon and observation period as VaR and SVaR respectively and are capitalised using the same multipliers as VaR and SVaR

- **Non VaR-type RNIVs:** Typically represent risks which would not be well captured by any VaR model either because it represents an event not historically observed in the VaR time series (e.g., currency peg break) or a market risk factor which is not seen to move frequently (e.g. correlation). These are typically estimated using stress scenarios. The stress methodology is calibrated equivalently to at least 99% confidence level and a capital horizon of at least 10 days over an appropriate observation period, depending on the liquidity of the risk. For the purpose of regulatory capital, the capital charge is equal to the loss arising from the stress test except when these risks are already adequately captured elsewhere e.g. via the IRC or CRM models, which are intended to capture certain risks not adequately covered by VaR

For regulatory capital these RNIVs are aggregated without any offsetting or diversification benefit.

Barclays' approach to managing risks

Management of market risk

Market risk control

The metrics that are used to measure market risk are controlled through the implementation of appropriate limit frameworks. Limits are set at the total Barclays Group level, asset class level, for example, interest rate risk, and at business level, for example, rates trading. Stress limits and many book limits, such as foreign exchange and interest rate sensitivity limits, are also used to control risk appetite.

Barclays Group-wide limits are reported to the BRC and are termed A-level limits for total management VaR, primary stress and secondary stresses and business scenarios. These are then cascaded down by risk managers in order to meet the Barclays Group-wide risk appetite.

Each A-level limit is set after consideration is given to revenue generation opportunities and overall risk appetite approved by the Board. Compliance with limits is monitored by the independent risk functions in the trading businesses with oversight provided by Barclays Group Market Risk.

Throughout 2018, Barclays Group Market Risk continued its ongoing programme of control testing and conformance testing on the trading businesses' market risk management practices. These reviews are intended to verify the business's conformance with the Market Risk Control Framework and best practices.

Market risk reporting

Trading businesses market risk managers produce a number of detailed and summary market risk reports daily, weekly, fortnightly and monthly for business and risk managers. Where relevant on a Barclays Group-wide basis, these are sent to Barclays Group Market Risk for review and a risk summary is presented at Barclays Group Market Risk Committee and the trading businesses' various market risk committees. The overall market risk profile is also presented to BRC on a regular basis.

Management of securitisation exposures

Securitisations give rise to credit, market and other risks. This section discusses the types of business activities and exposures that we incur in the course of activities related to securitisations.

- The objectives pursued in securitisation activities and the types of activities undertaken are discussed on page 188
- A description of the risks incurred in the course of securitisation activities, and how we manage them, is contained on page 189

Management of securitisation exposures

This section discloses information about Barclays Group's securitisation activities distinguishing between the various functions performed in supporting its customers and managing its risks. It includes traditional securitisations as well as synthetic transactions effected through the use of derivatives or guarantees.

For the purposes of Pillar 3 disclosures on pages 121 to 131, a securitisation is defined as a transaction or scheme where the payments are dependent upon the performance of a single exposure or pool of exposures and where the subordination of tranches determines the distribution of losses during the ongoing life of the transaction or scheme. Such transactions are ordinarily undertaken to transfer risk for Barclays Group or on behalf of a client.

Certain transactions undertaken by Barclays Group are not disclosed in the quantitative section (pages 121 to 131) as they do not fall under the regulatory securitisation framework (defined under Part Three, Title II, Chapter 5 of the CRR, part of the CRD IV package). These include funding transactions for the purposes of generating term liquidity, and certain government guaranteed transactions.

Objectives of securitisation activities

In the course of its business, Barclays Group has undertaken securitisations of its own originated assets as well as the securitisation of third party assets via special purpose vehicles, sponsored conduit vehicles and shelf programmes.

Barclays Group has securitised its own originated assets in order to manage Barclays Group's credit risk position and to generate term funding for Barclays Group balance sheet. Barclays Group also participates in primary securitisations and distributes bonds to the market to facilitate term liquidity for its clients.

Barclays Group also purchases asset backed loans and securities for the purpose of supporting client franchise, and purchases asset backed securities (ABS) for the purpose of investing its liquidity pool.

Further, Barclays Group makes a secondary market for a range of securitised products globally, including residential mortgage backed securities (RMBS), commercial mortgage backed securities (CMBS) and ABS.

The role and involvement of Barclays Group in securitisations in 2018

Barclays Group adopts the following roles in the securitisation processes in which it is involved:

Originator of assets prior to securitisation

Barclays Group originates or purchases commercial mortgage loans for the purpose of securitisation. The securities are then sold to investors through a broker-dealer subsidiary.

Barclays Group securitises assets otherwise originated in the ordinary course of business including corporate loans, consumer loans and commercial mortgage loans. Barclays Group also provides derivative transactions to securitisations sponsored by itself and third parties. These transactions carry counterparty credit risk and are included in Barclays Group trading book.

Providing warehousing facilities collateralised by third party assets prior to securitisation or exit via whole-loan sale

Barclays Group provides warehouse financing to third party loan originators, including for agency eligible loans that can be securitised by the Federal National Mortgage Association ('Fannie Mae'), the Federal Home Loan Mortgage Corporation ('Freddie Mac'), or the Government National Mortgage Association ('Ginnie Mae') and for corporate loans that can be securitised via collateralised loan obligations (CLO).

Executor of securitisation trades including bond marketing and syndication

Barclays Group transacts primarily as a principal in RMBS, ABS, CLO and CMBS with institutional investors and other broker-dealers. Agency backed residential and commercial mortgage securitisations include Credit Risk Transfer securities (Fannie Mae-sponsored CAS and Freddie Mac-sponsored STACR bonds). ABS securitisations include consumer ABS (e.g. credit card, student loan and auto) and non-traditional ABS (e.g. timeshares, wireless towers and whole business securitisations). Non-agency commercial mortgage securitisations include CMBS and commercial real estate collateralised loan obligations (CRE CLO). Barclays Group makes secondary market in CLOs and acts as arranger on behalf of clients to structure and place arbitrage CLOs. In certain limited instances, Barclays Group may also hold a portion of securitisations, which are required for risk retention purposes.

Purchaser of third party securitisations to support client franchise

Barclays Group may purchase third party securitisations. Barclays Group also funds on its own balance sheet securitisations similar to the ones funded via its sponsored conduits (see below).

Sponsoring conduit vehicles

Barclays Group acts as managing agent and administrative agent of three multi-seller asset backed commercial paper (ABCP) conduits, Sheffield Receivables Corporation, LLC (Sheffield), Salisbury Receivables Corporation, LLC (Salisbury), and Sunderland Receivables Corporation (Sunderland) through which interests in securitisations of third party originated assets are funded via a variety of funding mechanics including the issuance of ABCP.

From a regulatory perspective, Barclays acts as a sponsor of Sheffield, Salisbury and Sunderland. In relation to such conduit activity, Barclays Group provides all or a portion of the backstop liquidity to the commercial paper and, as appropriate, interest rate and foreign currency hedging facilities. Barclays Group receives fees for the provision of these services.

Sheffield, Salisbury and Sunderland hold securities classified as available for sale, measured at fair value with changes in fair value recognised through other comprehensive income (OCI) and non-securities classified as loans and receivables, measured at amortised cost on its standalone financial statements. It funds the assets through the issuance of ABCP. Note that Sheffield, Salisbury and Sunderland are consolidated for accounting but not regulatory purposes.

Funding transactions to generate term liquidity

Secured funding forms one of the key components of Barclays Group's diversified funding sources providing access to the secured wholesale market and complementing the diversification of funding by maturity, currency and geography. Barclays Group issues ABS and covered bonds secured primarily by customer loans and advances.

Barclays Group currently manages four key, on-balance sheet asset backed funding programmes to obtain term financing for mortgage loans and credit card receivables. These programmes also support retained issuances for Barclays Group to access central bank liquidity and funding. The UK regulated covered bond and the residential mortgage master trust securitisation programmes both utilise assets originated by Barclays Group's UK residential mortgage business. The third programme is a credit card master trust securitisation and uses receivables from Barclays Group's UK credit card business. The fourth programme is a SEC registered securitisation programme backed by US domiciled credit card receivables.

Risk transfer transactions

Barclays Group has entered into synthetic and cash securitisations of corporate and commercial loans (originated in the ordinary course of business) for the purposes of the transfer of credit risk to third party investors. The regulatory capital requirements of these transactions fall under CRD IV.

Management of securitisation exposures

Securitisation risks, monitoring and hedging policies

Capital requirements against securitisation exposures are subject to a separate framework under CRD IV (see CRR article 449) to account for the particular characteristics of this asset class. For risk management purposes, however, a securitisation is aligned to the risk type to which it gives rise.

Credit risks

In a securitisation structure, the payments are dependent upon the performance of a single exposure or pool of exposures. As these underlying exposures are usually credit instruments, the performance of the securitisation is exposed to credit risk.

Securitisation exposures are subject to Barclays Group Credit Risk policies and standards and business level procedures. This includes the requirement to review in detail each transaction at a minimum on an annual basis. As collateral risk is the primary driver the analysis places a particular focus on the underlying collateral performance, key risk drivers, servicer due diligence and cash flows, and the impact of these risks on the securitisation notes. The risk is addressed through the transaction structure and by setting an appropriate modelled tolerance level. Structural features incorporate wind-down triggers set against factors including, but not limited to, defaults/charge-offs, delinquencies, excess spread, dilution, payment rates and yield, all of which help to mitigate potential credit deterioration. Qualitative aspects such as counterparty risk and ancillary issues (operational and legal risk) are also considered. Changes to the credit risk profile of securitisation exposures will also be identified through ongoing transaction performance monitoring. In addition, periodic stress tests of the portfolio as part of ongoing risk management are conducted as well as in response to Barclays Group-wide or regulatory requests.

The principal committee responsible for the monitoring of the credit risk arising from securitisations is Wholesale Credit Risk Management Committee (WCRMC).

Market and liquidity risks

Market risk for securitised products is measured, controlled and limited through a suite of VaR, non-VAR and stress metrics in accordance with Barclays Group's Market Risk Policies and Procedures. The key risks of securitisation structures are interest rate, credit, spread, prepayment and liquidity risk. Interest rate and spread risk are hedged with standard liquid interest rate instruments (including interest rate swaps, US Treasuries and US Treasury futures). The universe of hedging instruments for credit and prepayment risk is limited and relatively illiquid, resulting in basis risks. In providing warehouse financing, Barclays Group is exposed to mark to market (if counterparty defaults on related margin call).

Hedging

Securitisation and re-securitisation exposures benefit from the relative seniority of the exposure in the capital structure. Due to lack of availability in the credit default swap market for individual asset backed securities, there are no material CDS hedge counterparties relating to the securitisation and re-securitisation population.

Operational risks

Operational risks are incurred in all of Barclays Group's operations. In particular, all securitised (and re-securitised) assets are subject to a degree of risk associated with documentation and the collection of cash flows.

In providing warehouse financing, Barclays Group incurs potential contingent operational risks related to representations and warranties should there be a need to foreclose on the line and it later be discovered that the underlying loans were not underwritten to agency agreed criteria. Such risks are mitigated by daily collateral margining and ready agency bids. Market risk is also mitigated by employing forward trades.

The Operational Risk Review Forum oversees the management of operational risks for the entire range of Barclays Group's activities.

Rating methodologies, ECAIs and RWA calculations

RWAs reported for securitised and re-securitised banking book and trading book assets at 31 December 2018 are calculated in line with CRR and UK PRA rules and guidance. Barclays Group has approval to use, and therefore applies, the internal ratings based approach for the calculation of RWAs where appropriate, and the Standardised Approach elsewhere.

Barclays Group employs eligible ratings issued by nominated External Credit Assessment Institutions (ECAIs) to risk weight its securitisation and re-securitisation exposure where their use is permitted. Ratings are considered eligible for use based on their conformance with the internal rating standard which is compliant with both CRR and European Credit Rating Agency regulation. The ECAIs nominated by Barclays Group for this purpose are Standard & Poor's, Moody's, Fitch, DBRS and Kroll.

As required by CRR, Barclays Group uses credit ratings issued by these ECAIs consistently for all exposures within the securitisation exposure class. For that reason, there is no systematic assignment of particular agencies to types of transactions within the securitisation exposure class.

For Sheffield, Salisbury and Sunderland, the Internal Assessment Approach (IAA) framework mirrors the ECAI methodology, which also includes Moody's, Standard & Poor's and Fitch, who rate the Sheffield, Salisbury and Sunderland programmes. Under the IAA framework, the securitisation exposure must be internally rated, and Barclays Group internal assessment process must meet certain requirements in order to map its own internal rating to an ECAI. Cash flow stress analysis on a securitisation structure is performed as prescribed by an ECAI methodology for the relevant ratings level, and is at least as conservative as the published methodology. Stress factors may include, among other factors, asset yields, principal payment rates, losses, delinquency rates and interest rates.

In determining an internal rating, collateral risks are the primary driver and are addressed through the transaction structure and modelled statistical confidence. The analysis reflects Barclays Group's view on the transaction, including dilution risk, concentration and tenor limits, as well as qualitative aspects such as counterparty risk and important ancillary issues (operational and legal risks). The adequacy and integrity of the servicer's systems and processes for underwriting, collections policies and procedures are also reviewed. Barclays Group conducts a full due diligence review of the servicer for each transaction. Each transaction is reviewed on, at least, an annual basis with a focus on the performance of underlying assets. The results of any due diligence review and the financial strength of the seller/servicer, are also factored into the analysis. Ratings of the transaction are reaffirmed with the most up to date ECAI methodologies. Any transaction which deviates from the current methodology is amended accordingly.

Summary of the accounting policies for securitisation activities

Certain Group-sponsored entities have issued debt securities or have entered into funding arrangements with lenders in order to finance specific assets. An entity is consolidated by Barclays Group when Barclays Group has control over the entity. Barclays Group controls an entity if it has all of the three elements of control which are i) power over the entity; and ii) exposure, or rights, to variable returns from its involvement with the entity; iii) the ability to use its power over the entity to affect the amount of Barclays Group returns.

The consolidation treatment must be initially assessed at inception and is reassessed if facts and circumstances indicate that there are changes to one or more of the three elements of control.

Management of securitisation exposures

Typically, assets that are awaiting securitisation on Barclays Group balance sheet are measured at fair value through P&L, using the appropriate method for the asset class as they are classified as held for trading or are designated at fair value through profit and loss, under the IFRS 9 fair value option. However, some non-derivative assets held prior to securitisation may qualify to be measured at amortised cost. When securitised assets have been included on Barclays Group balance sheet it is necessary to consider whether those assets may be removed from Barclays Group balance sheet. Assets which have been transferred to third parties (i.e. an unconsolidated Barclays Group entity), will remain on Barclays Group balance sheet, and treated as financings, unless the following criteria apply:

- substantially all the risks and rewards associated with the assets have been transferred, in which case, they are derecognised in full
- if a significant portion, but not all, of the risks and rewards have been transferred, the asset is derecognised entirely if the transferee has the ability to sell the financial asset, otherwise the asset continues to be recognised only to the extent of Barclays Group's continuing involvement.

Any financial support or contractual arrangements provided to unconsolidated entities, over securitised assets, would be recognised as a liability on balance sheet if it met the relevant IFRS criteria, or gave rise to a provision under IAS 37, and have to be disclosed (see Note 37 in the Barclays PLC Annual Report 2018). Note, however, that Barclays Group has a Significant Risk Transfer policy that does not allow for any support to be provided to any transactions that fall under the securitisation framework.

Assets may be transferred to a third party through a legal sale or an arrangement that meets the 'pass-through' criteria where the substance of the arrangement is principally that Barclays Group is acting solely as a cash collection agent on behalf of the eventual recipients.

Where the transfer applies to a fully proportionate share of all or specifically identified cash flows, the relevant accounting treatment is applied to that proportion of the asset.

When the above criteria support the case that the securitisation should not be accounted for as financing, the transaction will result in sale treatment or partial continued recognition of the assets to the extent of Barclays Group's continuing involvement in those assets. Gains are recognised to the extent that proceeds that can be measured using observable market data exceed the assets derecognised.

Any retained interests, which will consist of loans and/or securities depending on the nature of the transaction, are valued in accordance with Barclays Group's Accounting Policies, as set out in the Barclays PLC Annual Report 2018. To the extent that these interests are measured at fair value, they will be included within the fair value disclosures in the financial statements in the Annual Report. As outlined in these disclosures, key valuation assumptions for retained interests of this nature will include spreads to discount rates, default and recovery rates and prepayment rates that may be observable or unobservable.

In a synthetic securitisation transaction, the underlying assets are not sold into the relevant special purpose entity (SPE). Instead, their performance is transferred into the vehicle through a synthetic instrument such as a CDS, a credit linked note or a financial guarantee. The accounting policies outlined above will apply to synthetic securitisations.

Management of treasury and capital risk

This section provides an overview of the management of liquidity risk, capital risk and interest rate risk in the banking book.

- Liquidity risk, with a focus on how it is managed so that highly quality liquid assets are adequate at all times including under stress, is discussed on pages 176 to 178
- Capital risk, including how the risk of insufficient capital and leverage ratios and pension risk are managed, is discussed on pages 178 to 180
- The management of Interest rate risk in the banking book is discussed on pages 180 to 181

Management of treasury and capital risk

Treasury and capital risk

Liquidity risk: The risk that the firm is unable to meet its contractual or contingent obligations or that it does not have the appropriate amount, tenor and composition of funding and liquidity to support its assets.

Capital risk: The risk that the firm has an insufficient level or composition of capital to support its normal business activities and to meet its regulatory capital requirements under normal operating environments or stressed conditions (both actual and as defined for internal planning or regulatory testing purposes). This includes the risk from the firm's pension plans.

Interest rate risk in the banking book: The risk that the firm is exposed to capital or income volatility because of a mismatch between the interest rate exposures of its (non-traded) assets and liabilities.

Overview

Barclays Group Treasury manages treasury and capital risk exposure on a day-to-day basis with the Treasury Committee acting as the principal management body. To enforce effective oversight and segregation of duties and in line with the ERMF, the Treasury and Capital Risk function is responsible for oversight of key capital, liquidity, interest rate risk in the banking book (IRRBB) and pension risk management activities. The following describes the structure and governance associated with the risk types within the Treasury and Capital Risk function.

Liquidity risk management

Overview

The efficient management of liquidity is essential to Barclays Group in retaining the confidence of the financial markets and maintaining the sustainability of the business. There is a control framework in place for managing liquidity risk and this is designed to maintain liquidity resources that are sufficient in amount and quality and funding tenor profile that is adequate to meet the liquidity risk appetite as expressed by the Barclays PLC Board based on internal and regulatory liquidity metrics.

This is achieved via a combination of policy formation, review and governance, analysis, stress testing, limit setting and monitoring. Together, these meet internal and regulatory requirements.

Roles and responsibilities

The Treasury and Capital Risk function is responsible for the management and governance of the liquidity risk mandate defined by the Board and the production of ILAAPs. Treasury has the primary responsibility for managing liquidity risk within the set risk appetite.

Barclays Group's comprehensive control framework for managing Barclays Group's liquidity risk is designed to deliver the appropriate term and structure of funding, consistent with the liquidity risk appetite set by the Board.

The control framework incorporates a range of ongoing business management tools to monitor, limit and stress test Barclays Group's balance sheet and contingent liabilities and the Recovery Plan. Limit setting and transfer pricing are tools that are designed to control the level of liquidity risk taken and drive the appropriate mix of funds. Together, these tools reduce the likelihood that a liquidity stress event could lead to an inability to meet Barclays Group's obligations as they fall due. The control framework is subject to internal conformance testing and internal audit review.

Organisation and structure

Barclays PLC Board Risk Committee

- Reviews and recommends Barclays Group's risk appetite for treasury and capital risk to the Barclays PLC Board
- Reviews material issues impacting treasury and capital risk
- Recommends the approval of ICAAP and ILAAP to the Barclays PLC Board



Barclays Group Risk Committee

- Reviews and recommends risk appetite to the Barclays PLC Board Risk Committee
- Escalates material issues impacting treasury and capital risk to the Barclays PLC Board Risk Committee
- Reviews and recommends the ICAAP and ILAAP to the Barclays PLC Board Risk Committee for approval



Barclays Group Treasury and Capital Risk Committee

- Manages treasury and capital risk appetite
- Monitors the treasury and capital risk profile
- Monitors the treasury and capital risk control environment
- Recommends risk appetite to the Barclays Group Risk Committee and Barclays PLC Board Risk Committee
- Escalates material issues impacting treasury and capital risk to the Barclays Group Risk Committee and Barclays PLC Board Risk Committee

Management of treasury and capital risk

Ongoing business management	Early signs/mild stress	Severe stress	Recovery
<ul style="list-style-type: none"> stress testing and planning liquidity limits early warning indicators 	<ul style="list-style-type: none"> monitoring and review management actions requiring minimal business rationalisation 	<ul style="list-style-type: none"> monitoring and review management actions with limited impact on franchise 	<ul style="list-style-type: none"> activate appropriate recovery options to restore the capital and/or liquidity position of the Group

The Board approves the Barclays Group funding plan, internal stress tests and results of regulatory stress tests, and the Barclays Group recovery plan. The Treasury Committee is responsible for monitoring and managing liquidity risk in line with Barclays Group's funding management objectives, funding plan and risk frameworks. The Treasury and Capital Risk Committee monitors and reviews the liquidity risk profile and control environment, providing Second Line oversight of the management of liquidity risk. The BRC reviews the risk profile, and annually reviews risk appetite and the impact of stress scenarios on the Barclays Group funding plan/forecast in order to agree Barclays Group's projected funding abilities.

Barclays Group maintains a range of management actions for use in a liquidity stress, these are documented in the Barclays Group Recovery Plan. Since the precise nature of any stress event cannot be known in advance, the actions are designed to be flexible to the nature and severity of the stress event and provide a menu of options that can be drawn upon as required. The Barclays Group Recovery Plan also contains more severe recovery options to generate additional liquidity in order to facilitate recovery in a severe stress. Any stress event would be regularly monitored and reviewed using key management information by Treasury, Risk and business representatives.

Risk Appetite and planning

Barclays has established an LRA over Group stress tests to represent the level of liquidity risk Barclays Group chooses to take in pursuit of its business objectives and in meeting its regulatory obligations.

The key expression of the liquidity risk is through stress tests. It is measured with reference to the liquidity pool compared to anticipated net stressed outflows for each of five stress scenarios. Barclays has defined both internal short term and long term LRA stress test metrics.

The LRA for internal stress tests is approved by the Board. The LRA is reviewed on a continuous basis and is subject to formal review at least annually as part of the Internal Liquidity Adequacy Assessment Process (ILAAP).

Statement of Liquidity Risk Appetite: For 2018, the Board has approved that Barclays Group will maintain an amount of available liquidity resources to meet modelled and prescribed regulatory liquidity stress outflows over a period of time (minimum buffer duration):

- 30 days in a Barclays specific stress
- 90 days in a market wide stress
- 30 days in a combined stress
- Long term LRA 80% LCR (Pillar 2)
- LCR 30 days minimum ratio 100% (Pillar 1 basis) and 100% (Pillar 2 basis)

The stress outflows are used to determine the size of Barclays Group Liquidity Pool, which represents those resources immediately available to meet outflows in a stress. In addition to the liquidity pool, the control framework and policy provides for other management actions, including generating liquidity from other liquid assets on Barclays Group's balance sheet in order to meet additional stress outflows, or to preserve or

restore the Liquidity Pool in the event of a liquidity stress.

Liquidity limits

Barclays manages limits on a variety of on and off-balance sheet exposures, a sample of which is shown in the table below. These limits serve to control the overall extent and composition of liquidity risk taken by managing exposure to the cash outflows.

Early warning indicators

Barclays Treasury FLM monitors a range of market indicators for early signs of liquidity risk either in the market or specific to Barclays, a sample of which are shown in the table below. These are designed to immediately identify the emergence of increased liquidity risk to maximise the time available to execute appropriate mitigating actions. Early warning indicators are used as part of the assessment of whether to invoke Barclays Group Recovery Plan, which provides a framework for how the liquidity stress would be managed.

Recovery & resolution planning

Barclays maintains a Group Recovery Plan (GRP) which is designed to provide a framework to effectively manage a severe financial stress. The GRP is proportionate to the nature, scale and complexity of the business and is tested to evaluate that it is operationally robust. The GRP details the escalation and invocation process for the plan, including integration with i) BAU monitoring of capital and liquidity Early Warning Indicators (EWI) to detect signs of approaching financial stress, ii) existing processes within Barclays Treasury and Risk to respond to mild/moderate stress and iii) a governance process for formally invoking the GRP. The Plan would be formally invoked by Barclays Group Board

Examples of liquidity limits

Gross Repo limits	FX Cashflow limits	Concentration limits	Minimum Cash Requirement
Secured Mismatch limits	Debt Buyback limits	Off-Balance Sheet commitment limits	Ratings Downgrade limits

Examples of early warning indicators

Change in composition of deposits	Deterioration in stress test surplus	Rising funding costs
Widening CDS spreads	Change in maturity profile	Stress in financial markets

Management of treasury and capital risk

and would be overseen and executed by the Barclays Crisis Leadership Team (BCLT), a flexible committee of senior management for responding to all types of stress events. In invoking and executing the plan, the BCLT (in consultation with Barclays Group Board) would assess the likely impact of the stress event on Barclays Group and its subsidiaries and determine the appropriate response for the nature and severity of the stress. The GRP includes a range of recovery options to respond to financial stresses of varying severity and includes detailed information on financial and non-financial impacts of options and a communications plan.

Liquidity risk management

A control framework is in place for Liquidity Risk under which the Treasury function operates. The control framework describes liquidity risk management processes, associated policies and controls that Barclays Group has implemented to manage liquidity risk within the Liquidity Risk Appetite and is subject to annual review. Internal architecture is in place to record and measure our group wide liquidity metrics reporting

The Board sets the Liquidity Risk Appetite based on the internal liquidity risk stress test model (LRA) and external regulatory requirements namely the Liquidity Coverage Ratio (LCR). The Liquidity Risk Appetite is represented as the level of risk Barclays Group chooses to take in pursuit of its business objectives and in meeting its regulatory obligations. The approved Liquidity Risk Appetite is implemented in line with the control framework and policy for liquidity risk.

Capital risk management

Overview

Capital risk is managed through ongoing monitoring and management of the capital position, regular stress testing and a robust capital governance framework.

Roles and responsibilities

The management of capital risk is integral to Barclays Group's approach to financial stability and sustainability management, and is embedded in the way businesses and legal entities operate.

Capital risk management is underpinned by a control framework and policy. The capital management strategy, outlined in Barclays Group and legal entity capital plans, is developed in alignment with the control framework and policy for capital risk, and is implemented consistently in order to deliver on Barclays Group's objectives.

The Board approves the Barclays Group capital plan, internal stress tests and results of regulatory stress tests, and the Barclays Group recovery plan. The Barclays Group Treasury Committee is responsible for monitoring and managing capital risk in line with Barclays Group's capital management objectives, capital plan and risk frameworks. The Barclays Group Treasury and Capital Risk Committee monitors and reviews the capital risk profile and control environment, providing Second Line oversight of the management of capital risk. The Barclays PLC BRC reviews the risk profile, and annually reviews risk appetite and the impact of stress scenarios on the Barclays Group capital plan/forecast in order to agree Barclays Group's projected capital adequacy.

Local management assures compliance with an entity's minimum regulatory capital requirements by reporting to local Asset and Liability Committees with oversight by Barclays Group Treasury Committee, as required.

Treasury has the primary responsibility for managing and monitoring capital and reports to the Barclays Group Finance Director. The Barclays Group Treasury and Capital Risk function provides oversight of capital risk and is an independent risk function that reports to the Barclays Group CRO. Production of the Barclays PLC ICAAP is the joint responsibility of Barclays Group Risk and Barclays Group Finance.

Capital risk management

Barclays Group's capital management strategy is driven by the strategic aims of Barclays Group and the risk appetite set by the Board. Barclays Group's objectives are achieved through well embedded capital management practices.

Capital planning and allocation

Barclays Group assesses its capital requirements on multiple bases, with Barclays Group's capital plan set in consideration of Barclays Group's risk profile and appetite, strategic and performance objectives, regulatory requirements, international financial reporting standards (including IFRS 9), and market and internal factors, including the results of stress testing. The capital plan is managed on a top-down and bottom-up basis through both short-term and medium-term financial planning cycles, and is developed with the objective that Barclays Group maintains an adequate level of capital to support its capital requirements. The planning process captures the impact of IFRS 9 to the capital plan, both including and excluding the impacts of transitional regulatory adjustments.

Primary objectives

- Maintain adequate capital for Barclays Group and its legal entities to withstand the impact of the risks that may arise under normal and stressed conditions.
- Maintain adequate capital to cover Barclays Group's current and forecast business needs and associated risks in order to provide a viable and sustainable business offering.

Core practices

- Meet minimum regulatory requirements in all jurisdictions
- Maintain capital buffers over regulatory minimums
- Perform Barclays Group-wide internal and regulatory stress tests
- Develop contingency plans for severe and extreme stresses, which include stress management actions and recovery actions.
- Maintain capital ratios aligned with rating agency expectations.
- Maintain a capital plan on a short-term and medium-term basis aligned with Barclays Group's strategic objectives, balancing capital generation of the business with business growth and shareholder distributions.

Management of treasury and capital risk

The PRA determines the regulatory capital requirements for the consolidated Barclays Group. Under these regulatory frameworks, capital requirements are set in consideration of the level of risk that Barclays Group is exposed to and the factors above, and are measured through both risk-based Risk Weighted Assets (RWAs) and leverage-based metrics. An internal assessment of Barclays Group's capital adequacy is undertaken through the Internal Capital Adequacy Assessment Process (ICAAP) and is used to inform the capital requirements of Barclays Group.

Barclays Group expects to meet the minimum requirements for capital and leverage at all times and also holds an internal buffer sized according to Barclays Group's assessment of capital risk.

In 2018, Barclays Group complied with all regulatory minimum capital requirements.

Through the capital planning process, capital allocations are approved by Barclays Group Executive committee, taking into consideration the risk appetite and strategic aims of Barclays Group. Regulated legal entities are, at a minimum, capitalised to meet their current and forecast regulatory and business requirements.

Monitoring and reporting

Capital is managed and monitored to maintain that Barclays' capital plans remain appropriate and that risks to the plans are considered. Limits are set by Risk to control the level of capital risk within Barclays Group. Treasury are responsible for complying with these limits as the first line of defence for the management of capital risk. Limits are monitored through appropriately governed forums in the first and second line of defence.

To support compliance with risk limits, Treasury monitor capital risks against firm-specific and macroeconomic early warning indicators and report on these to the Barclays Group Treasury Committee and entity ALCOs. This enables a consistent and objective approach to monitoring the capital outlook against the capital plan, and supports the early identification when outlooks deteriorate.

Capital management information is readily available to support Senior Management's strategic and day-to-day business decision making.

Stress testing and risk mitigation

Internal group-wide stress testing is undertaken to quantify and understand the impact of sensitivities on the capital plan and capital ratios arising from stressed macroeconomic conditions. Recent economic, market and peer institution stresses are used to inform the assumptions developed for internal stress tests and to assess the effectiveness of mitigation strategies.

Barclays Group also undertakes stress tests prescribed by the BoE and EBA, and legal entities undertake stress tests prescribed by their local regulators. These stress tests inform decisions on the size and quality of the internal capital buffer required and the results are incorporated into Barclays Group capital plan to maintain adequacy of capital under normal and severe, but plausible stressed conditions.

Actions are identified as part of the stress tests that can be taken to mitigate the risks that may arise in the event of material adverse changes in the current economic and business outlook. As an additional layer of protection, Barclays Group Recovery Plan defines the actions and implementation strategies available to Barclays Group to increase or preserve capital resources in the situation that a stress occurs that is more severe than anticipated.

Capitalisation of legal entities

Barclays as a group comprises legal entities across multiple jurisdictions. Barclays Group and regulated legal entities are subject to prudential requirements from the PRA and/or local regulators. Sufficient capital needs to be available to meet these requirements both at a consolidated Group and individual legal entity level.

Where aggregate requirements for individual entities in Barclays Group are higher than the consolidated requirement, Barclays Group may use debt or capital other than CET1 to meet these incremental requirements (so called 'double leverage'). There are regulatory and rating agency expectations that constrain the amount of double leverage that can be used. This might increase the overall level of capital Barclays Group is required to hold.

The capitalisation of legal entities is reviewed annually as part of the capital planning process and monitored on an ongoing basis.

Transferability of capital

Surplus capital held in Group entities is required to be repatriated to the immediate parent in the form of dividends and/or capital repatriation, subject to local regulatory requirements, exchange controls and tax implications. This approach provides optimal flexibility on the re-deployment of capital across legal entities. Capital is managed for Barclays Group as a whole as well as for its operating subsidiaries to allow fungibility and redeployment of capital while meeting relevant internal and regulatory targets at entity levels.

Foreign exchange risk

Barclays Group has capital resources and risk weighted assets denominated in foreign currencies. Changes in foreign exchange rates result in changes in the Sterling equivalent value of foreign currency denominated capital resources and RWAs. As a result, Barclays Group's CET1 ratio is sensitive to foreign currency movements.

Barclays Group seeks to minimise the volatility of the CET1 ratio caused by foreign exchange rate movements by maintain that the CET1 capital movements broadly match the revaluation of Barclays Group's foreign currency RWA exposures. This is achieved by seeking to align the ratio of CET1 sensitive to foreign exchange rate movements to foreign currency RWAs with Barclays Group CET1 ratio.

Pension risk

Barclays Group maintains a number of defined benefit pension schemes for past and current employees. The ability of the pension fund to meet pension payments is maintained through investments and contributions.

Pension risk arises because the estimated market value of the pension fund assets might decline; investment returns might reduce; or the estimated value of the pension liabilities might increase. Barclays Group monitors the pension risks arising from its defined benefit pension schemes and works with Trustees to address shortfalls. In these circumstances Barclays Group could be required or might choose to make extra contributions to the pension fund. Barclays Group's main defined benefit scheme was closed to new entrants in 2012.

Management of pension risk

Many of Barclays Group's defined benefit (DB) pension funds are established as trusts in order to keep the fund's assets separate from the sponsor (Barclays). As such the Trustees are responsible for:

- The investment strategy including asset allocation and performance.
- Assessing the level of technical provision required.
- Monitoring progress against funding objectives.
- Complying with local legislation.

The legal structure of Barclays' DB pension funds and the role of the Trustees mean that Pension Risk is not part of Barclays Group's risk appetite assessment used to manage other key risks.

Pension Forums

The Pension Executive Board (PEB) has accountability for the effective operation of pensions across Barclays Group. It is the most senior executive body for pensions in Barclays.

The Pension Management Group (PMG) is accountable for the oversight and management of Barclays Group's responsibilities relating to its pension arrangements. The PMG is accountable to the PEB.

The PEB and PMG are not created or mandated under the ERMF. However, these forums provide Risk the opportunity to discuss and comment on pension risk in a wider context with other relevant stakeholders from HR, Legal, Treasury and Finance.

Management of treasury and capital risk

Key Pension Risk controls and governance include:

- Annual review, challenge and proposal of the IAS19 market-driven assumptions used for the calculation of the pension scheme liabilities used in Barclays disclosures.
- Representation and input at key pension forums.
- Input into Barclays Group's ICAAP for pension risk.
- Input into Barclays Group's strategic planning and stress test exercises.
- Provide independent oversight of the pension risk profiles from Barclays Group's perspective.
- Coordinates response to regulatory initiatives, developments and proposals on pensions, which may include inputs from material overseas schemes.

Interest rate risk in the banking book management

Overview

Banking book operations generate non-traded market risk, primarily through the mismatch between the duration of assets and liabilities and where interest rates on products reset at different dates. As per Barclays Group's policy to remain within the defined risk appetite, interest rate and FX risks residing in the banking books of the businesses are transferred to Treasury where they are centrally managed. Currently these risks are transferred to Treasury via funding arrangements and interest rate or FX swaps. However, the businesses remain susceptible to non-traded market risk from seven key sources:

- **Repricing/residual risk:** the impact from the mismatch between the run-off of product balances and the associated interest rate hedges or from un-hedged liquidity buffer investments.
- **Structural risk:** the change to the net interest income on rolling structural hedge replenishment due to adverse movements in interest rates, assuming that the balance sheet remains constant.
- **Prepayment risk:** the potential loss in value if actual prepayment or early withdrawal behaviour from customers deviates from the expected or contractually agreed behaviour, which may result in a hedge or funding adjustment at a cost to Barclays Group. Exposures are typically considered (where appropriate) net of any applicable offsetting early repayment charges. This risk principally relates to early repayment of fixed rate loans or withdrawal from fixed rate savings products.
- **Recruitment risk:** the potential loss in value if the actual completion or drawdown behaviour from customers deviates from the expected behaviour, which may result in a hedge or funding adjustment at a cost to Barclays Group. This risk principally relates to the completion timing around Barclays

Group's fixed rate mortgage pipeline process.

- **Margin compression risk:** the effect of internal or market forces on the Barclays Group's net margin where, for example, in a low rate environment a fall in interest rates may further decrease interest income earned on the assets whereas funding costs may not be reduced given the already minimum level of interest rates.
- **Lag risk:** arises from the delay in repricing customer rates for certain variable/managed rate products, following an underlying change to market interest rates. This is typically driven by either regulatory constraints around customer notification on pricing changes, processing time for Barclays Group's notification systems or contractual agreements within a product's terms and conditions.
- **Asset swap spread risk:** the spread between LIBOR and sovereign bond yields that arises from the management of the liquidity buffer investments and its associated hedges.

Furthermore, liquidity pool investments are generally subject to fair value through other comprehensive income (FVOCI) accounting rules, whereby changes in the fair value of these assets impact capital via other comprehensive income (OCI).

Roles and responsibilities

The non-traded market risk team provides risk management oversight and monitoring of all traded and non-traded market risk in Treasury and Customer Banking Books, which specifically includes:

- Interest rate risk assessment in the customer banking books.
- Review and challenge the behavioural assumptions used in hedging and transfer pricing.
- Risk management of the liquidity buffer investments and funding activities.
- Oversight of balance sheet hedging.
- Review of residual risk in the hedge accounting solution and hedging of net investments.
- Proposal and monitoring of risk limits to manage traded and non-traded market risk within the agreed risk appetite.

The Barclays Group Treasury Committee is responsible for monitoring and managing IRRBB risk in line with Barclays Group's management objectives and risk frameworks. The Barclays Group Risk Committee monitors and reviews the IRRBB risk profile and control environment, providing Second Line oversight of the management of IRRBB risk. The Barclays Group Board Risk Committee reviews the interest rate risk profile, including annual review of the risk appetite and the impact of stress scenarios on the interest rate risk of the Barclays Group.

Management of IRRBB

Barclays seeks to minimise interest rate risk in the banking book and maintain it is within the agreed risk appetite, whilst actively managing the associated risks which could reduce the value of liquidity buffer investments. Therefore, the primary control for IRRBB is calculating the risk measures described below and monitoring risk exposure vs. defined limits. Limits are set at an aggregate business level and then cascaded down.

Barclays uses a range of complementary technical approaches to measure IRRBB as described below. The risk is measured and controlled using both an income based metric (EaR) and value based metrics (EVE, EC and VaR).

Summary of measures for non-traded market risk

Measure	Definition
Earnings at risk (EaR)	A measure of the potential change in Net Interest Income (NII) due to an adverse interest rate movement over a predefined time horizon.
Economic value of equity (EVE)	A measure of the potential change in value of expected future cash flows due to adverse interest rate movement, based on the existing balance sheet run-off profile.
Economic capital (EC)	A measure of the potential loss from a severe stress scenario over a predefined time horizon at a particular confidence level.
Value at risk (VaR)	A measure of the potential loss of value arising from unfavourable market movements at a specific confidence level, if current positions were to be held unchanged for the predefined holding period.
Stress testing	A measure to assess risk exposures under severely adverse market scenarios.

Annual Earnings at Risk (AEaR)

AEaR measures the sensitivity of net interest income over a one-year period. It is calculated as the difference between the estimated income using the expected rate forecast and the lowest estimated income following a parallel increase or decrease in interest rates.

The main model assumptions are:

The balance sheet is kept at the current level, i.e. no growth is assumed, and run-off balances are reinvested to maintain a constant balance sheet

Management of treasury and capital risk

Contractual positions are adjusted for an assumed behavioural profile, more closely matching the expected product life-cycle.

AEaR sensitivity is calculated for the entire banking book, including the liquidity buffer investments. The metric provides a measure of how interest rate risk may impact Barclays Group's earnings, providing a simple comparison between risk and returns. The main disadvantage of the metric is its short-term focus, as it only measures the impact on a position in the first 12 months. In order to counter this, Barclays Group has implemented additional economic value risk metrics.

⊕ See page 38 for a review of AEaR in 2018.

Economic Value of Equity (EVE)

EVE calculates the change in the present value of Barclays Group's expected cash-flows from a parallel upward or downward interest rate (100bps) shock. Note that the EVE calculation measures sensitivity in terms of present value, while AEaR measures income sensitivity, and as such are complimentary.

The EVE measure is applied to the entire banking book, that is, the same coverage as AEaR, and covers the full life of transactions and hedges allowing the risk over the whole life of positions to be considered. It does not capture the impact of business growth or management actions, and is based on the expected balance sheet run-off profile.

Economic Capital (EC, for recruitment, prepayment and residual risk)

EC consistent models, based on VaR methodologies, are used to measure unexpected losses to a 99% confidence interval over a one-year period. Within non-traded market risk, this measure aims to capture recruitment, prepayment and residual risks for banking book products (see definitions on page 180). EC metrics typically measure variations in economic value from specific sources of risk, for example, prepayment risk EC for fixed rate mortgages predicts the cost of hedging in order to reduce any mismatch exposure resulting from the impact of unexpected customer prepayment levels.

Limits are set against EC metrics and breaches trigger mitigating actions to reduce exposure to appropriate levels. EC modelling is typically applied only to contractually fixed rate products, with the majority of variable and administered rate portfolios not subject to an EC measure.

Advantages of EC are that it can calculate unexpected losses to an appropriate degree of confidence given the nature of the risks, and that it covers sources of loss beyond the scope of other models (one-year period for AEaR, only existing business being considered for EVE, etc). However, as with any statistical model, the choice of the distribution may drive under-prediction of very extreme events, i.e. the real distribution may be fat-tailed. To mitigate this, Barclays Group continues to improve its models using longer time series of historical data to capture extreme moves.

Value at Risk (VaR)

VaR is an estimate of the potential loss arising from unfavourable market movements if the current position were to be held unchanged for a set period. For internal market risk management purposes, a historical simulation methodology is used with a two-year equally weighted historical period, at a 95% confidence level.

Daily VaR is used to measure residual interest and foreign exchange risks within certain banking book portfolios.

Quarterly scaled VaR is used to measure risk in the liquidity pool investments. The calculation uses a two-year historical period, a 95% confidence level and is scaled from daily to quarterly using a constant factor.

Stress testing

All non-traded market risk positions are subject to Barclays Group's annual stress testing exercise, where scenarios based on adverse economic parameters are used to determine the potential impact of the positions on results and the balance sheet.

Management of operational risk

The sources of operational risks, and how those risks are managed, are detailed in this section.

- The types of risks that are classified as operational risks are described on pages 183-184.
- Governance, management and measurement techniques are covered on pages 183 to 185.

Barclays' approach to managing risks

Management of operational risk

Operational risk

The risk of loss to the firm from inadequate or failed processes, systems, human factors or due to external events (for example, fraud) where the root cause is not due to credit or market risks.

Overview

The management of operational risk has three key objectives:

- Deliver an operational risk capability owned and used by business leaders which is pragmatic, relevant, and enables business leaders to make sound risk decisions over the long term.
- Provide the frameworks and policies to enable management to meet their risk management responsibilities while the second line of defence provides robust, independent, and effective oversight and challenge.
- Deliver a consistent and aggregated measurement of operational risk that will provide clear and relevant insights, so that the right management actions can be taken to keep the operational risk profile consistent with Barclays Group's strategy, the stated risk tolerance and stakeholder needs.

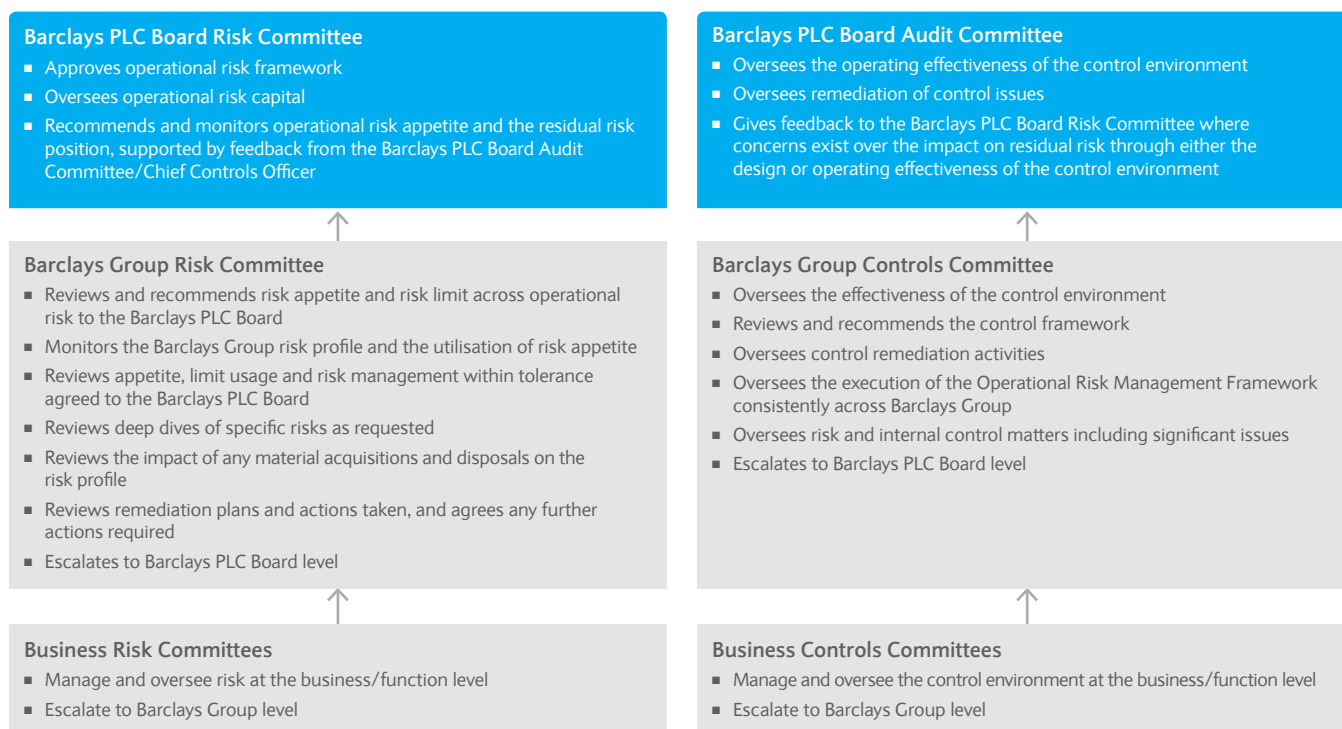
Following submission of an application to the PRA relating to Barclays Group Advanced Measurement Approach (AMA) permission, Barclays Group received the PRA's approval to use the Standardised Approach (TSA) for operational risk regulatory capital purposes with effect from 1 April 2018. Barclays Group has conservatively elected to retain its previous operational risk RWA amount unchanged for 2018.

Barclays Group operates within a strong system of internal controls that enables business to be transacted and risk taken without exposing Barclays Group to unacceptable potential losses or reputational damages. Barclays Group has an overarching Enterprise Risk Management Framework (ERMF) that sets out the approach to internal governance.

Organisation and structure

Operational risk comprises a number of specific risk categories defined as follow:

- **Data Management & Information Risk:** The risk that Barclays Group information is not captured, retained, used or protected in accordance with its value and legal and regulatory requirements.
- **Financial Reporting Risk:** The risk of a material misstatement or omission within Barclays Group's external financial reporting, regulatory reporting or internal financial management reporting
- **Fraud Risk:** The risk of financial loss when an internal or external party acts dishonestly with the intent to obtain an undue benefit, cause a loss to, or to expose either Barclays Group or its customers and clients to a risk of loss.
- **Payments Process Risk:** The risk of payments being processed inaccurately, with delays or without appropriate authentication and authorisation. It includes payments processes from initiation through to external settlement, including any repairs or amendments.
- **People Risk:** The set of risks associated with employing and managing people, including compliance with regulations, appropriate resourcing for requirements, recruitment and development risks (excluding health and safety related risk).
- **Premises Risk:** The risk of business detriment or harm to people due to premises and infrastructure issues.
- **Physical Security Risk:** The risk of business detriment, financial loss or harm to people as a result of any physical security incident impacting Barclays Group or a Barclays Group's employee - relating to harm to people, unauthorised access, intentional damage to premises or theft or intentional damage to moveable assets.
- **Supplier Risk:** The risk that is introduced to Barclays Group or a Barclays Group's entity as a consequence of obtaining services or goods from another legal entity, or entities, whether external or internal as a result of inadequate selection, inadequate management or inadequate exit management.
- **Tax Risk:** The risk of unexpected tax cost in relation to any tax for which Barclays Group is liable, or of reputational damage on tax matters with key stakeholders such as tax authorities, regulators, shareholders or the public. Tax cost includes tax, interest or penalties levied by a taxing authority.
- **Technology Risk:** The risk of dependency on technological solutions and failure to develop, deploy and maintain technology solutions that are stable, reliable and deliver business need.



Barclays' approach to managing risks

Management of operational risk

- **Transaction Operations Risk:** The risk of customer/client or Barclays Group detriment due to unintentional error and/or failure in the end-to-end process of initiation, processing and fulfilment of an interaction between a customer/client and Barclays Group with an underlying financial instrument (e.g. mortgage, derivative product, trade product etc.) in consideration.

In addition to the above, operational risk encompasses risks associated with prudential regulation. This includes the risk of failing to: adhere to prudential regulatory requirements, including capital adequacy requirements; provide regulatory submissions; or monitor and manage adherence to new prudential regulatory requirements.

These risks may result in financial and/or non-financial impacts including legal/regulatory breaches or reputational damage.

Barclays Group also recognises that there are certain threats/risk drivers that are more thematic and have the potential to impact Barclays Group's strategic objectives. These are Enterprise Risk Themes which require an overarching and integrated risk management approach. Including:

- **Cyber:** The potential loss or detriment to Barclays caused by individuals or groups (threat actors) with the capabilities and intention to cause harm or to profit from attacks committed via network information systems against us, our suppliers, or customers/clients.
- **Data:** Aligned to the data strategy of Barclays Group and encompassing data risks to Barclays Group from multiple risk categories, including data management, data architecture, data security & protection, data resilience, data retention and data privacy.
- **Execution:** The risk of failing to deliver and implement the agreed initiatives, priorities and business outcomes required to deliver Barclays Group's strategy within agreed timelines.
- **Resilience:** The risk of the organisation's ability to survive and prosper in its commercial endeavours in the presence of adverse events, shocks and chronic or incremental changes.

Roles and responsibilities

The prime responsibility for the management of operational risk and the compliance with control requirements rests with the legal entities, business and functional units where the risk arises. The operational risk profile and control environment is reviewed by business management through specific meetings which cover these items. Legal entities, businesses and functions are required to report their operational risks on both a regular and an event-driven basis. The reports include a profile of the material risks that may threaten the achievement of their objectives and the effectiveness of key controls, operational risk events and a review of scenarios.

The Barclays Group Head of Operational Risk is responsible for establishing, owning and maintaining an appropriate Barclays Group-wide Operational Risk Management Framework and for overseeing the portfolio of operational risk across Barclays Group.

Operational Risk Management (ORM) acts in a Second Line of Defence capacity, and is responsible for defining and overseeing the implementation of the framework and monitoring Barclays Group's operational risk profile. ORM alerts management when risk levels exceed acceptable tolerance in order to drive timely decision making and actions by the first line of defence. Operational risk issues escalated from these meetings are considered through the second line of defence review meetings. Depending on their nature, the outputs of these meetings are presented to the operational risk profile Forum, the Barclays PLC Board Risk Committee or the Barclays PLC Board Audit Committee.

Specific reports are prepared by Operational Risk on a regular basis for the Barclays Group Risk Committee, and the Barclays PLC Board Risk Committee.

Specific reports are prepared by legal entity and Barclays Group Operational Risk on a regular basis for BRC and BAC.

Operational risk framework

The Operational Risk Framework comprises a number of elements which allow Barclays Group to manage and measure its operational risk profile and to calculate the amount of operational risk capital that Barclays Group needs to hold to absorb potential losses. The minimum, mandatory requirements for each of these elements are set out in the Operational Risk Framework and supporting policies. This framework is implemented across Barclays Group with all legal entities, businesses and functions required to implement and operate an Operational Risk Framework that meets, as a minimum, the requirements detailed in the operational risk policies.

The Operational Risk Framework is a key component of the ERMF and has been designed to improve risk management and meet a number of external governance requirements including the Basel Capital Accord, the Capital Requirements Directive and Turnbull guidance as an evaluation framework for the purposes of Section 404(a) of the Sarbanes-Oxley Act. It also supports the Sarbanes-Oxley requirements.

The Operational Risk Framework includes the following elements:

Risk and control self-assessments

Risk and control self-assessments (RCSAs) are the way in which Barclays Group identifies and assesses the risks which are inherent in the material processes operated by Barclays Group. Managers in the business use the RCSA approach to evaluate the key controls in place to mitigate those risks and assess the residual risk exposure to Barclays Group. The businesses / functions are then able to make decisions on what action, if any, is required to reduce the level of residual risk to Barclays Group. These risk assessments are monitored on a regular basis to maintain that each business understands the risks it faces.

Risk events

An operational risk event is any circumstance where, through the lack or failure of a control, Barclays Group has actually, or could have, made a loss. The definition includes situations in which Barclays Group could have made a loss, but in fact made a gain, as well as incidents resulting in reputational damage or regulatory impact only.

A standard threshold is used across Barclays Group for reporting risk events and part of the analysis includes the identification of improvements to processes or controls, to reduce the recurrence and/or magnitude of risk events. For significant events, both financial and non-financial, this analysis includes the completion of a formal lessons learnt report.

Barclays Group also maintains a record of external risk events which are publicly available and is a member of the Operational Riskdata eXchange (ORX), a not-for-profit association of international banks formed to share anonymous loss data information. This external loss information is used to support and inform risk identification, assessment and measurement.

Management of operational risk

Operational Risk Tolerance

The Board approves an Operational Risk Tolerance Statement on an annual basis, establishing the level of operational risk that is acceptable in pursuit of Barclays Group's strategic objectives.

Operational risks are assessed and monitored against the Board approved Operational Risk Tolerance, with Risk Reduction Plans established for any risks that are above the acceptable level.

The Operational Risk Profile is monitored through Risk Committees at legal entity, Barclays Group and Board level in the context of Operational Risk Tolerance.

Key indicators

Key indicators (KIs) are metrics which allow the Operational Risk Profile to be measured and monitored against Management's Risk Tolerance. KIs include defined thresholds and performance is reported regularly to Management to drive action when risk exceeds acceptable limits.

Risk scenarios

Risk scenarios are a summary of the extreme potential risk exposures for Barclays Group covering the complete range of risks. The scenarios include an assessment of the key drivers for the exposure, occurrence and impact of the scenario and a review of the corresponding control environment. The risk scenario assessments are a key input to the calculation and benchmarking of economic capital requirements (see following section on operational risk measurement). The assessment considers analysis of internal and external loss experience, Key Risk Indicators, Risk and Control Self-Assessments and other relevant information. The businesses and functions analyse potential extreme scenarios, considering the:

- circumstances and contributing factors that could lead to an extreme event;
- potential financial impacts;
- controls that seek to limit the likelihood of such an event occurring; and
- the mitigating actions that would be taken if the event were to occur (for example crisis management procedures, business continuity or disaster recovery plans).

Management then determine whether the potential risk exposure is acceptable or whether changes in risk management control or business strategy are required.

The risk scenarios are regularly re-assessed, taking into account trends in risk factors.

Reporting

The ongoing monitoring and reporting of operational risk is a key component of the Operational Risk Framework. Reports and management information are used by the Operational Risk function and by legal entity and business management to understand, monitor, manage and control operational risks and losses.

The operational risk profile is reviewed by senior management at legal entity Risk Committee meetings as well as the Operational Risk Profile Forum and BRC, BAC and the Board.

Operational risk measurement

Barclays Group assesses its Operational Risk Capital requirements using the Standardised Approach (TSA). Barclays Group also maintains a voluntary floor for the Regulatory Capital. The floor is based on the Capital calculated by Barclays Group under the previous AMA regime.

Insurance

As part of its risk management approach, Barclays Group also uses insurance to mitigate the impact of some operational risks.

Management of model risk

The types of model risk, and how they are managed, are detailed in this section.

- The types of risks that are classified as model risk are described on page 187.
- Governance, management and measurement techniques are covered on page 187.

Barclays' approach to managing risks

Management of model risk

Model risk

The risk of the potential adverse consequences from financial assessments or decisions based on incorrect or misused model outputs and reports.

Overview

Barclays Group uses models to support a broad range of activities, including informing business decisions and strategies, measuring and limiting risk, valuing exposures, conducting stress testing, assessing capital adequacy, managing client assets, and meeting reporting requirements.

Since models are imperfect and incomplete representations of reality, they may be subject to errors affecting the accuracy of their output. Model errors can result in inappropriate business decisions being made, financial loss, regulatory risk, reputational risk and/or inadequate capital reporting. Models may also be misused, for instance applied to products that they were not intended for, or not adjusted, where fundamental changes to their environment would justify re-evaluating their core assumptions. Errors and misuse are the primary sources of model risk.

Robust model risk management is crucial to assessing and managing model risk within a defined risk appetite. Strong model risk culture, appropriate technology environment, and adequate focus on understanding and resolving model limitations are crucial components.

Organisation and structure

Barclays Group allocates substantial resources to identify and record models and their usage, document and monitor the performance of models, validate models and adequately address model limitations. Barclays Group manages model risk as an enterprise level risk similar to other principal risks.

Barclays Group has a dedicated Model Risk Management (MRM) function that consists of two main units: the Independent Validation Unit (IVU), responsible for model validation and approval, and Model Governance and

Controls (MGC), covering model risk governance, controls and reporting, including ownership of model risk policy and the model inventory.

The model risk management framework consists of the model risk policy and standards. The policy prescribes group-wide, end-to-end requirements for the identification, measurement and management of model risk, covering model documentation, development, implementation, monitoring, annual review, independent validation and approval, change and reporting processes. The policy is supported by global standards covering model inventory, documentation, validation, complexity and materiality, testing and monitoring, overlays, risk appetite, as well as vendor models and stress testing challenger models.

Barclays Group is continuously enhancing model risk management. The function reports to the Barclays Group CRO and operates a global framework. Implementation of best practice standards is a central objective of Barclays Group. Model risk reporting flows to senior management as depicted below.

Roles and responsibilities

The key model risk management activities include:

- correctly identifying models across all relevant areas of Barclays Group, and recording models in the Barclays Group Models Database (GMD), the Barclays Group-wide model inventory. The heads of the relevant model ownership areas annually attest to the completeness and accuracy of the model inventory. MGC undertakes regular conformance reviews on the model inventory.
- enforcing that every model has a model owner who is accountable for the model. The model owner must sign off models

prior to submission to IVU for validation. The model owner works with the relevant technical teams (model developers, implementation, monitoring, data services, regulatory) to maintain that the model presented to IVU is and remains fit for purpose.

- overseeing that every model is subject to validation and approval by IVU, prior to being implemented and on a continual basis. While all models are reviewed and re-approved for continued use each year, the validation frequency and the level of review and challenge applied by IVU is tailored to the materiality and complexity of each model. Validation includes a review of the model assumptions, conceptual soundness, data, design, performance testing, compliance with external requirements if applicable, as well as any limitations, proposed remediation and overlays with supporting rationale. Material model changes are subject to prioritised validation and approval.
- defining model risk appetite in terms of risk tolerance, and qualitative metrics which are used to track and report model risk.
- maintaining specific standards that cover model risk management activities relating to stress testing challenger models, model overlays, vendor models, and model complexity and materiality.

Barclays PLC Board Risk Committee

- Reviews and recommends Barclays Group's risk appetite for model risk to the Barclays PLC Board
- Reviews the effectiveness of the processes and policies by which Barclays Group identifies and manages model risk
- Assesses performance relative to model risk appetite



Barclays Group Risk Committee

- Reviews risk appetite across model risk
- Monitors the Barclays Group risk profile for model risk, including emerging risks, against expected trends, and the utilisation of risk appetite



Business Risk Committees

- Review critical updates on model risk e.g. updates on Barclays Group-wide remediation plans
- Review targeted updates on progress towards meeting regulatory deliverables
- Review identified policy breaches

Management of conduct risk

This section provides an overview of the management of conduct risk.

- Conduct risk is the risk that detriment is caused to our customers, clients, counterparties or Barclays Group and its employees because of inappropriate judgement in the execution of our business activities (see page 189).

Barclays' approach to managing risks

Management of conduct risk

Conduct risk

The risk of detriment to customers, clients, market integrity, effective competition or Barclays from the inappropriate supply of financial services, including instances of wilful or negligent misconduct

Overview

Barclays Group defines, manages and mitigates conduct risk with the goal of providing positive customer and client outcomes, protecting market integrity and promoting effective competition. This includes taking reasonable steps to assure that Barclays Group's culture and strategy are appropriately aligned to these goals; its products and services are reasonably designed and delivered to meet the needs of customers and clients; promoting the fair and orderly operation of the markets in which Barclays Group does business; and that Barclays Group does not commit or facilitate money laundering, terrorist financing, bribery and corruption or breaches of economic sanctions.

Product Lifecycle, Culture and Strategy and Financial Crime are the risk categories within the Barclays Group definition of conduct risk.

Organisation and structure

The governance of conduct risk within Barclays Group is fulfilled through management committees and forums operated by the First and Second Lines of Defence with clear escalation and reporting lines to the Board.

The Barclays Group Risk Committee is the most senior executive body responsible for reviewing and monitoring the effectiveness of Barclays Group's management of conduct risk.

Roles and responsibilities

The Conduct Risk Management Framework (CRMF) outlines how Barclays Group manages and measures its conduct risk profile.

Senior managers have accountability for managing conduct risk in their areas of responsibility. This is expressed in their Statements of Responsibilities. The primary responsibility for managing conduct risk and compliance with control requirements sits with the business where the risk arises. The First Line Business Control Committees provide oversight of controls relating to conduct risk.

The Barclays Group Chief Compliance Officer is responsible for owning and maintaining an appropriate Barclays Group-wide CRMF. This includes defining and owning the relevant conduct risk policies and oversight of the implementation of controls to manage and escalate the risk.

Businesses are required to report their conduct risks on both a quarterly and an event-driven basis to their respective trading entity risk committees. The quarterly reports detail conduct risks inherent within the business strategy and include forward looking horizon scanning analysis as well as backward looking evidence-based indicators from both internal and external sources.

The Barclays Bank Group and the Barclays Bank UK Group Trading Entity Risk Committees are the primary Second Line governance forums for oversight of conduct risk profile and implementation of the CRMF. The responsibilities of the Business Unit Risk Committees include approval of the conduct risk tolerance and the business defined key indicators. Additional responsibilities include the identification and discussion of any emerging conduct risks exposures which have been identified.



Management of reputation risk

This section provides an overview of the management of reputation risk.

- Reputation risk is the risk of damage to the Barclays brand arising from association, action or inaction which is perceived by stakeholders to be inappropriate or unethical (see page 191).

Barclays' approach to managing risks

Management of reputation risk

Reputation risk

The risk that an action, transaction, investment or event will reduce trust in the firm's integrity and competence by clients, counterparties, investors, regulators, employees or the public.

Overview

A reduction of trust in Barclays Group's integrity and competence may reduce the attractiveness of Barclays Group to stakeholders and could lead to negative publicity, loss of revenue, regulatory or legislative action, loss of existing and potential client business, reduced workforce morale and difficulties in recruiting talent. Ultimately it may destroy shareholder value.

Organisation and structure

The Barclays Group Risk Committee is the most senior executive body responsible for reviewing and monitoring the effectiveness of Barclays Group's management of reputation risk.

Roles and responsibilities

The Barclays Group Chief Compliance Officer is accountable for developing a reputation risk framework, policies and standards, including limits against which data is monitored, reported on and escalated, as required.

Reputation risk is by nature pervasive and can be difficult to quantify, requiring more subjective judgement than many other risks. The Reputation Risk Framework sets out what is required to manage reputation risk effectively and consistently across Barclays Group. During 2018, the Framework was updated to include a new reputation risk policy and supporting standards.

The primary responsibility for identifying and managing reputation risk and adherence to the control requirements sits with the business and support functions where the risk arises.

Barclays Bank Group and Barclays Bank UK Group are required to operate within established reputation risk appetite and their component businesses prepare reports for their respective Risk and Board Risk Committees highlighting their most significant current and potential reputation risks and issues and how they are being managed. These reports are a key internal source of information for the quarterly reputation risk reports which are prepared for the Barclays Group Risk Committee and Barclays PLC Board Reputation Committee.

Barclays PLC Board Reputation Committee

- Reviews the effectiveness of the processes and policies by which Barclays Group identifies and manages reputation risk.
- Considers and evaluates regular reports on Barclays Group's reputation risk issues and exposures.
- Considers whether significant business decisions will compromise Barclays Group's ethical policies or core business beliefs and values



Barclays Group Risk Committee

- Reviews the monitoring processes utilised by Compliance and Corporate Relations to ensure they are proportionate given the level of risk identified in the businesses.
- Reports reputation issues in accordance with Barclays Group's Reputation Risk Management Framework for all material issues which may have the potential to incur reputation risk for Barclays Group.



Business Risk Committees

- Review and escalate reputation risks in accordance with Barclays Group's Reputation Risk Management Framework.

Management of legal risk

This section provides an overview of the management of legal risk.

- Legal risk is the risk of loss or imposition of penalties, damages or fines from the failure of the firm to meet its legal obligations including regulatory or contractual requirements (see page 193).

Barclays' approach to managing risks

Management of legal risk

Legal risk

The risk of loss or imposition of penalties, damages or fines from the failure of the firm to meet its legal obligations including regulatory or contractual requirements.

Overview

Overall, Barclays Group has limited tolerance for legal risk, however the multitude of laws and regulations across the globe are highly dynamic and their application to particular circumstances is often unclear. This results in a degree of legal risk. The Barclays Group-wide Legal Risk Management Framework (LRMF) comprises a number of integrated components that allows Barclays Group to identify, manage and measure its legal risk profile, supported by legal risk policies and associated standards aligned to the following legal risks:

- **contractual arrangements** – failure to engage Barclays Group Legal Function in relation to contractual arrangements
- **litigation management** – litigation not being managed by or with the support of Barclays Group Legal Function
- **intellectual property (IP)** – failure to protect Barclays Group's IP assets or infringement of third party IP rights
- **competition/anti-trust** – failure to identify and escalate competition/anti-trust issues to Barclays Group Legal Function or inappropriate interactions with competition/anti-trust authorities
- **use of law firms** – inappropriate instruction of external legal advisors
- **contact with regulators** – inappropriate interactions with regulators or inappropriate handling of confidential supervisory information from regulatory or government agencies
- **legal engagement** – failure to appropriately engage Barclays Group Legal Function in relation to key business decisions.

Organisation and structure

The Legal Executive Committee oversees, monitors and challenges legal risk across Barclays Group. The Barclays Group Risk Committee is the most senior executive body responsible for reviewing and monitoring the effectiveness of management of risk across Barclays Group. Escalation paths from this committee exist to the Barclays PLC Board Risk Committee.

Roles and responsibilities

The LRMF requires Barclays Group's businesses and functions to integrate the management of legal risk within their strategic planning and business decision making including managing adherence to minimum control requirements. Barclays Group's businesses and functions are accountable and have primary responsibility for identifying legal risk in their area as well as responsibility for adherence to minimum control requirements and compliance with the LRMF and legal risk policies.

All employees, regardless of their position, business or function or location, must play a part in Barclays Group's legal risk management. Employees are responsible for understanding and taking reasonable steps to manage and minimise legal risk that may arise in the context of their individual roles and responsibilities. Employees are required to be familiar with the LRMF and legal risk policies and to know how to escalate actual or potential legal risk issues.

Legal risk management is everyone's responsibility, as part of a risk culture aligned to Barclays Group's Values, promoting transparency and timely escalation and management of risks and issues, supported by clearly defined roles and responsibilities across the three lines of defence.

The Legal Function does not sit in any of the three lines of defence but supports them all. The LRMF details the main activities the Legal Function undertakes to support Barclays Group in managing risk, including the identification of issues and risks, coverage with appropriate expertise and escalation. The LRMF, legal risk policies and activities of the Legal Function are designed so that Barclays Group receives advice from appropriate legal professionals in circumstances that are most likely to give rise to legal risk.

The Group General Counsel, supported by the Legal Executive Committee and the Global Head of Legal Risk, Governance and Control, is responsible for maintaining an appropriate LRMF, developing non-financial legal risk tolerances and for overseeing legal risk management.

Barclays PLC Board Risk Committee

- Approves risk tolerances
- Reviews risk profile and material risk issues
- Commissions, receives and considers reports on key risk issues



Barclays Group Risk and Controls Committees

- Monitor risk profile with respect to non-financial risk tolerances
- Debates and agrees actions on the non-financial risk profile and risk strategy across Barclays Group



Legal Executive Committee

- Oversees, monitors and challenges legal risk across Barclays Group

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Appendix A – PD, LGD, RWA and Exposures by country

The following tables show IRB data for countries in which Barclays is active where the IRB RWA amount is more than 1% of the Group total for any asset class. The countries are shown in descending order of aggregated total RWAs for all asset classes.

Table 96: PD, LGD, RWA and exposure values by country for IRB – all asset classes

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	3.54%	29.7%	84,004	269,573	Switzerland	0.02%	45.0%	840	18,567
United States	0.48%	41.1%	21,241	99,754	India	0.34%	49.9%	562	825
Italy	8.09%	24.6%	2,889	9,028	Spain	2.04%	46.5%	495	1,051
Germany	1.16%	53.1%	2,808	13,886	Saudi Arabia	0.06%	94.0%	424	2,330
Japan	0.08%	46.5%	2,222	14,447	Australia	0.09%	44.8%	367	1,972
Ireland	2.09%	45.7%	1,990	5,404	South Africa	0.38%	36.9%	319	500
Canada	0.88%	44.9%	1,581	5,833	Turkey	1.82%	48.7%	221	174
France	0.28%	43.2%	1,542	7,528	Hong Kong	0.05%	48.7%	217	1,561
Netherlands	0.28%	44.0%	1,344	4,307	Brazil	1.46%	49.2%	184	165
Luxembourg	0.48%	48.1%	1,002	4,351	Singapore	0.05%	45.2%	140	2,643

Table 96a: PD, LGD, RWA and exposure values by country for IRB – central governments and central banks

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	0.02%	45.5%	22	195	Switzerland	0.01%	45.0%	463	16,094
United States	0.00%	45.0%	803	41,070	India	0.28%	45.0%	206	391
Italy	0.17%	45.0%	1	7	Spain	–	–	–	–
Germany	0.01%	45.0%	140	5,089	Saudi Arabia	0.06%	95.5%	404	2,252
Japan	0.04%	45.0%	886	8,749	Australia	0.01%	45.0%	59	411
Ireland	0.03%	50.0%	42	491	South Africa	0.39%	5.6%	7	113
Canada	0.01%	45.0%	20	115	Turkey	–	–	–	–
France	–	–	–	–	Hong Kong	0.02%	45.0%	38	830
Netherlands	–	–	–	–	Brazil	1.56%	45.0%	64	76
Luxembourg	–	–	–	–	Singapore	0.01%	45.0%	67	2,408

Table 96b: PD, LGD, RWA and exposure values by country for IRB – institutions

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	0.91%	41.4%	5,090	15,076	Switzerland	0.04%	45.1%	202	1,624
United States	0.25%	42.4%	2,149	8,376	India	0.63%	48.9%	130	191
Italy	0.24%	46.2%	116	165	Spain	0.07%	46.3%	199	596
Germany	0.07%	37.3%	473	2,424	Saudi Arabia	0.08%	52.3%	20	78
Japan	0.13%	50.1%	825	3,938	Australia	0.05%	45.5%	171	980
Ireland	0.17%	48.3%	133	401	South Africa	0.39%	46.5%	189	262
Canada	0.71%	45.0%	543	2,838	Turkey	1.82%	48.8%	221	173
France	0.04%	43.4%	741	4,460	Hong Kong	0.08%	46.1%	76	473
Netherlands	0.04%	41.5%	134	1,001	Brazil	1.47%	49.5%	99	75
Luxembourg	0.04%	56.4%	118	955	Singapore	0.05%	46.4%	27	165

Table 96c: PD, LGD, RWA and exposure values by country for IRB – corporates

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	3.42%	35.3%	32,745	61,167	Switzerland	0.17%	44.8%	172	842
United States	0.92%	37.7%	18,288	50,304	India	0.22%	58.5%	226	242
Italy	1.70%	45.3%	271	475	Spain	4.63%	46.8%	296	454
Germany	0.44%	43.4%	657	2,401	Saudi Arabia	–	–	–	–
Japan	0.11%	46.1%	511	1,760	Australia	0.21%	43.5%	136	580
Ireland	2.50%	44.9%	1,815	4,512	South Africa	0.39%	45.0%	123	125
Canada	1.08%	44.8%	1,018	2,879	Turkey	–	–	–	–
France	0.62%	42.8%	801	3,066	Hong Kong	0.10%	65.2%	104	258
Netherlands	0.36%	44.8%	1,210	3,305	Brazil	0.88%	70.5%	21	14
Luxembourg	0.62%	45.8%	884	3,395	Singapore	1.60%	50.8%	46	70

Appendix A – PD, LGD, RWA and Exposures by country

Table 96d: PD, LGD, RWA and exposure values by country for IRB – SME retail

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	14.02%	38.1%	3,929	8,894	Switzerland	–	–	–	–
United States	–	–	–	–	India	–	–	–	–
Italy	–	–	–	–	Spain	0.70%	18.1%	–	1
Germany	–	–	–	–	Saudi Arabia	–	–	–	–
Japan	–	–	–	–	Australia	–	–	–	–
Ireland	–	–	–	–	South Africa	37.56%	30.8%	2	3
Canada	–	–	–	–	Turkey	–	–	–	–
France	–	–	–	–	Hong Kong	–	–	–	–
Netherlands	–	–	–	–	Brazil	–	–	–	–
Luxembourg	–	–	–	–	Singapore	–	–	–	–

Table 96e: PD, LGD, RWA and exposure values by country for IRB – secured retail

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	2.46%	10.2%	17,699	139,992	Switzerland	5.81%	24.0%	2	7
United States	23.81%	28.3%	1	4	India	–	–	–	–
Italy	8.61%	22.9%	2,501	8,382	Spain	5.96%	19.4%	–	1
Germany	0.86%	21.7%	–	2	Saudi Arabia	0.12%	15.5%	–	–
Japan	–	–	–	–	Australia	0.84%	17.1%	–	–
Ireland	–	–	–	–	South Africa	0.09%	13.9%	–	–
Canada	–	–	–	–	Turkey	0.56%	24.7%	–	–
France	1.73%	20.3%	–	2	Hong Kong	–	–	–	–
Netherlands	10.32%	25.6%	–	1	Brazil	0.35%	16.9%	–	–
Luxembourg	0.12%	21.3%	–	1	Singapore	0.19%	13.3%	–	–

Table 96f: PD, LGD, RWA and exposure values by country for IRB – revolving retail

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	5.42%	76.0%	18,347	37,977	Switzerland	–	–	–	–
United States	–	–	–	–	India	–	–	–	–
Italy	–	–	–	–	Spain	–	–	–	–
Germany	3.78%	79.4%	1,520	3,944	Saudi Arabia	–	–	–	–
Japan	–	–	–	–	Australia	–	–	–	–
Ireland	–	–	–	–	South Africa	–	–	–	–
Canada	–	–	–	–	Turkey	–	–	–	–
France	–	–	–	–	Hong Kong	–	–	–	–
Netherlands	–	–	–	–	Brazil	–	–	–	–
Luxembourg	–	–	–	–	Singapore	–	–	–	–

Table 96g: PD, LGD, RWA and exposure values by country for IRB – other retail exposures

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	8.78%	89.6%	6,172	6,271	Switzerland	–	–	–	–
United States	–	–	–	–	India	–	–	–	–
Italy	–	–	–	–	Spain	–	–	–	–
Germany	–	–	–	–	Saudi Arabia	–	–	–	–
Japan	–	–	–	–	Australia	–	–	–	–
Ireland	–	–	–	–	South Africa	–	–	–	–
Canada	–	–	–	–	Turkey	–	–	–	–
France	–	–	–	–	Hong Kong	–	–	–	–
Netherlands	–	–	–	–	Brazil	–	–	–	–
Luxembourg	–	–	–	–	Singapore	–	–	–	–

Appendix B – Analysis of impairment

IFRS Impairment

The following tables are presented using the IFRS consolidation rather than the regulatory consolidation basis. See pages 147-148 for background on impairment, and page 10 explaining the scope of regulatory consolidation.

Table 97: Analysis of impaired and past due exposures and allowance for impairment by exposure type

This table shows total gross loans and advances analysed by balances past due and not past due. It also shows gross exposures assessed for impairment in accordance with IFRS9 and the resulting allowance for impairment.

	Not past due £m	Past due £m	Total £m	Gross exposure for impairment £m	Allowance for Impairment £m
As at 31 December 2018					
Traded loans	7,078	156	7,234	–	–
Financial assets designated at fair value through the income statement	19,494	30	19,524	–	–
Financial assets designated at fair value through other comprehensive income	668	–	668	668	1
Cash collateral and settlement balances	75,448	1,777	77,225	77,225	3
Gross loans and advances at amortised cost:					
Home Loans	145,960	4,788	150,748	150,748	464
Credit cards, unsecured and other retail lending	57,260	4,514	61,774	61,774	5,343
Corporate loans	114,887	5,767	120,654	120,654	963
Total Gross loans and advances at amortised cost	318,107	15,069	333,176	333,176	6,770
Total	420,795	17,032	437,827	411,069	6,774

Table 98: Geographic analysis of impaired and past due exposures and allowance for impairment

This table shows total gross loans and advances analysed by balances past due and not past due, and gross exposures assessed for impairment in accordance with IFRS9 and the resulting impairment allowance, split by geographic location of the counterparty.

	Not past due £m	Past due £m	Total £m	Gross exposure assessed for impairment £m	Allowance for Impairment £m
As at 31 December 2018					
UK	273,846	11,582	285,428	275,622	3,561
Europe	51,679	1,980	53,659	49,540	833
Americas	82,423	3,242	85,665	73,467	2,239
Africa and Middle East	3,641	123	3,764	3,724	105
Asia	9,206	105	9,311	8,716	36
Total	420,795	17,032	437,827	411,069	6,774

Appendix C – Countercyclical Capital Buffer

Table 99: Countercyclical capital buffer

The below table shows the geographical distribution of credit exposures relevant to the calculation of the countercyclical buffer in line with CRR Article 440.

Note that exposures in the below table are prepared in accordance with CRD, Article 140. Hence exclude exposures to central governments/banks, regional governments, local authorities, public sector entities, multilateral development banks, international organisations and institutions and as such the exposure values differ to those found in the Analysis of credit risk section.

Barclays Group												
Breakdown by Country	General Credit Exposures		Trading book exposures		Securitisation exposures		Own Funds requirements					
	Exposure Value for SA £m	Exposure Value for IRB £m	Sum of long and short positions for trading book exposures for SA £m	Value of trading book exposures for internal models £m	Exposure Value for SA £m	Exposure Value for IRB £m	Of which: General credit exposures £m	Of which: Trading book exposures £m	Of which: Securitisation exposures £m	Total £m	Own Funds Requirements weights %	Counter-cyclical capital buffer rate %
Lithuania (LT)	15	–	–	–	–	–	–	–	–	–	–	0.50%
Czech Republic (CZ)	13	96	2	4	–	–	4	–	–	4	0.03%	1.00%
United Kingdom (GB)	30,847	254,801	1,322	739	–	16,106	7,982	48	154	8,184	51.26%	1.00%
Iceland (IC)	–	–	–	7	–	–	–	–	–	–	–	1.25%
Slovakia (SK)	–	–	–	–	–	–	–	–	–	–	–	1.25%
Hong Kong (HK)	640	113	39	64	–	–	36	5	–	41	0.26%	1.88%
Norway (NO)	518	445	31	23	–	–	50	3	–	53	0.33%	2.00%
Sweden (SE)	840	416	37	123	–	478	57	4	4	64	0.40%	2.00%
Total (countries with existing CCyB rate)	32,872	255,871	1,431	959	–	16,584	8,129	60	158	8,347	52.28%	
United States (US)	39,428	52,917	10,374	267	–	17,035	3,806	498	191	4,495	27.92%	n/a
Germany (DE)	3,296	6,593	259	431	–	–	317	27	–	344	2.14%	n/a
Italy (IT)	889	8,863	51	194	–	3	289	9	1	299	1.86%	n/a
France (FR)	3,953	3,104	454	843	–	353	192	63	2	257	1.59%	n/a
South Africa (ZA)	1,174	130	19	8	–	–	237	2	–	239	1.48%	n/a
Ireland (IE)	1,067	3,375	45	6	–	321	205	6	6	216	1.34%	n/a
Total (countries with own funds requirements weights 1% or above)	49,808	74,982	11,202	1,749	–	17,711	5,045	605	200	5,849	36.33%	–
Total (rest of the world less than 1% requirement)	15,291	17,602	1,604	1,599	–	806	1,527	214	27	1,768	10.96%	n/a
Total	97,971	348,455	14,238	4,306	–	35,102	14,700	880	385	15,965	100%	

Amount of institution-specific countercyclical capital buffer

Total risk exposure amount	£311,926m
Institution specific countercyclical buffer rate	0.53%
Institution specific countercyclical buffer requirement	£1,661m

Appendix C – Countercyclical Capital Buffer

Table 99a: Countercyclical capital buffer for significant subsidiaries

Barclays Bank PLC												
Breakdown by Country	General Credit Exposures		Trading book exposures		Securitisation exposures		Own Funds requirements					Counter-cyclical capital buffer rate %
	Exposure Value for SA £m	Exposure Value for IRB £m	Sum of long and short positions for trading book exposures for SA £m	Value of trading book exposures for internal models £m	Exposure Value for SA £m	Exposure Value for IRB £m	Of which: General credit exposures £m	Of which: Trading book exposures £m	Of which: Securitisation exposures £m	Total £m	Own Funds Requirements weights %	
Lithuania (LT)	–	–	–	–	–	–	–	–	–	–	–	0.50%
Czech Republic (CZ)	13	96	1	4	–	–	4	–	–	4	0.05%	1.00%
United Kingdom (GB)	62,591	42,456	1,168	739	–	14,612	3,564	33	142	3,739	41.09%	1.00%
Slovakia (SK)	–	–	–	–	–	–	–	–	–	–	–	1.25%
Iceland (IC)	–	–	–	7	–	–	–	–	–	–	–	1.25%
Hong Kong (HK)	405	111	36	64	–	–	35	5	–	40	0.44%	1.88%
Norway (NO)	96	438	13	18	–	–	24	2	–	27	0.29%	2.00%
Sweden (SE)	57	357	19	123	–	478	13	2	4	18	0.20%	2.00%
Total (countries with existing CCyB rate)	63,162	43,458	1,237	955	–	15,090	3,640	42	146	3,828	42.07%	
United States (US)	13,282	49,311	4,106	267	–	17,035	2,313	220	191	2,723	29.92%	n/a
Italy (IT)	879	8,845	31	194	–	709	287	8	106	401	4.40%	n/a
France (FR)	3,700	3,038	356	833	–	353	178	56	2	237	2.60%	n/a
Luxembourg (LU)	1,393	1,646	126	48	–	436	176	13	4	193	2.12%	n/a
India (IN)	1,533	399	2	31	–	22	148	4	1	153	1.68%	n/a
Netherlands (NL)	694	2,751	72	3	–	–	133	12	–	145	1.59%	n/a
Canada (CA)	132	2,725	148	38	–	12	103	16	–	120	1.32%	n/a
Germany (DE)	1,761	2,304	162	431	–	–	94	20	–	114	1.26%	n/a
Ireland (IE)	717	1,899	24	6	–	321	100	4	6	109	1.20%	n/a
Spain (ES)	885	468	55	184	–	2	88	7	–	95	1.04%	n/a
Bermuda (BM)	1,079	126	27	22	–	–	87	4	–	91	1.00%	n/a
Total (countries with own funds requirements weights 1% or above)	26,055	73,512	5,109	2,057	–	18,890	3,707	364	310	4,381	48.13%	–
Total (rest of the world less than 1% requirement)	7,660	7,496	554	1,281	–	334	758	112	22	892	9.79%	n/a
Total	96,877	124,465	6,900	4,293	–	34,314	8,105	518	478	9,101	100%	

Amount of institution-specific countercyclical capital buffer

Total risk exposure amount	£173,200m
Institution specific countercyclical buffer rate	0.43%
Institution specific countercyclical buffer requirement	£744m

Appendix C – Countercyclical Capital Buffer

Table 99b: Countercyclical capital buffer for significant subsidiaries

Barclays Bank UK PLC												
Breakdown by Country	General Credit Exposures		Trading book exposures		Securitisation exposures		Own Funds requirements				Counter-cyclical capital buffer rate %	
	Exposure Value for SA £m	Exposure Value for IRB £m	Sum of long and short positions for trading book exposures for SA £m	Value of trading book exposures for internal models £m	Exposure Value for SA £m	Exposure Value for IRB £m	Of which: General credit exposures £m	Of which: Trading book exposures £m	Of which: Securitisation exposures £m	Total £m		Own Funds Requirements weights %
Lithuania (LT)	–	–	–	–	–	–	–	–	–	–	–	0.50%
Czech Republic (CZ)	–	–	–	–	–	–	–	–	–	–	–	1.00%
United Kingdom (GB)	7,287	211,518	–	–	–	1,494	4,760	–	12	4,773	99.82%	1.00%
Slovakia (SK)	–	–	–	–	–	–	–	–	–	–	–	1.25%
Iceland (IC)	–	–	–	–	–	–	–	–	–	–	–	1.25%
Hong Kong (HK)	–	–	–	–	–	–	–	–	–	–	–	1.88%
Norway (NO)	–	–	–	–	–	–	–	–	–	–	–	2.00%
Sweden (SE)	83	–	–	–	–	–	1	–	–	1	0.03%	2.00%
Total (countries with existing CCyB rate)	7,370	211,518	–	–	–	1,494	4,761	–	12	4,774	99.85%	
Total (rest of the world less than 1% requirement)	57	81	–	–	–	–	7	–	–	7	0.11%	n/a
Total	7,427	211,599	–	–	–	1,494	4,768	–	12	4,781	100%	

Amount of institution-specific countercyclical capital buffer	
Total risk exposure amount	£75,327m
Institution specific countercyclical buffer rate	1.00%
Institution specific countercyclical buffer requirement	£752m

Appendix D – Disclosure on asset encumbrance

Asset encumbrance arises from collateral pledged against secured funding and other collateralised obligations. Barclays funds a portion of trading portfolio assets and other securities via repurchase agreements and other similar borrowing and pledges a portion of customer loans and advances as collateral in securitisation, covered bond and other similar structures. Barclays monitors the mix of secured and unsecured funding sources within the Group's funding plan and seeks to efficiently utilise available collateral to raise secured funding and meet other collateral requirements. The encumbered assets below will not agree to those disclosed in the Annual Report (page 189). The reported values represent the median of the values reported to the regulator via supervisory returns over the period 31 December 2017 to 31 December 2018. The Annual Report disclosure is reported as at year end. There is a difference due to the differences in consolidation between the Annual Report (IFRS consolidation) and the Pillar 3 (regulatory consolidation).

Template A – Assets

		Carrying amount of encumbered assets	Fair value of encumbered assets	Carrying amount of non-encumbered assets	Fair value of non-encumbered assets
		010	040	060	090
		£bn	£bn	£bn	£bn
010	Assets of the institution	193.0	–	950.3	–
030	Equity instruments	30.2	30.2	25.2	25.2
040	Debt securities	62.7	62.7	61.1	61.1
120	Other assets	–	–	244.1	–

Template B – Collateral received

		Fair value of encumbered collateral received or own debt securities issued available for encumbrance	Fair value of collateral received or own debt securities issued available for encumbrance
		010	040
		£bn	£bn
130	Collateral received by the institution	531.2	61.5
150	Equity instruments	89.8	19.1
160	Debt securities	451.9	42.5
230	Other collateral received	–	–
240	Own debt securities issued other than own covered bonds or ABSs	–	1.8

Template C – Encumbered assets/collateral received and associated liabilities

		Matching liabilities, contingent liabilities or securities lent	Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered
		010	030
		£bn	£bn
010	Carrying amount of selected financial liabilities	242.7	462.5

The Group's median asset encumbrance for 2018 was £193.0bn, which primarily related to firm financing of trading portfolio assets and other securities, cash collateral and secured funding against loans and advances to customers. Encumbered assets have been identified in a manner consistent with the Group's reporting requirements under CRR. Securities and commodity assets are considered encumbered when they have been pledged or used to secure, collateralise or credit enhance a transaction which impacts their transferability and free use.

Appendix E – Disclosures on remuneration

Barclays PLC remuneration

The following disclosures are made in accordance with Article 450 of the Capital Requirements Regulation, the Basel Committee on Banking Supervision (BCBS) Pillar 3 disclosure requirements standard (March 2017) and the EBA Guidelines on sound remuneration policies.

Information on decision-making policies for remuneration and the links between pay and performance and Barclays' remuneration policy and process (including information on remuneration design, performance measurement and risk adjustment, deferral and vesting, fixed to variable remuneration ratio and variable remuneration and benefits policy) and details of Barclays PLC Directors' remuneration for 2018 is contained in the Remuneration report, which can be found on pages 99 to 126 of the 2018 Annual Report.

Total remuneration for the financial year		All employees
Number of individuals		90,441
Fixed remuneration (£m)		5,232
Variable remuneration (£m)		1,649
Total remuneration (£m)		6,881

Barclays PLC Material Risk Takers (MRTs)

MRTs are the members of the Barclays PLC Board, the Barclays Bank UK PLC Board and the Barclays Bank PLC Board and Barclays' Group employees whose professional activities could have a material impact on the Group's risk profile. A total of 1,590 individuals were MRTs in 2018 (2017: 1,642 or 1,570 excluding Barclays Africa Group Limited). 'Senior management' means members of the Barclays PLC Board (executive Directors and non-executive Directors) and members of the Barclays Group Executive Committee in accordance with Article 3(9) of CRDIV.

Senior management have a minimum shareholding requirement which for the executive Directors is Barclays' shares worth two times Total Fixed Pay (Fixed Pay plus Pension) within 5 years of date of appointment, for non-executive Directors is to retain all Barclays' shares bought with £30,000 (£100,000 for the Chairman) of their basic fees each year until they retire from the Board and for Group Executive Committee is Barclays' shares worth two times salary within 5 years of date of appointment. Other MRTs do not have a minimum shareholding requirement.

Barclays' major business areas are Barclays UK (which encompasses personal and business banking in the UK) and Barclays International (which encompasses corporate and investment banking and consumer, cards and payments). 'Barclays Other' includes internal control functions and corporate functions.

Remuneration for the financial year	Senior management ^a	Other MRTs		
		Barclays International	Barclays UK	Barclays Other
Fixed remuneration^b				
Number of individuals	22	992	56	520
Total fixed remuneration (£m)	26	493	17	167
Fixed cash remuneration (£m) ^c	17	488	17	167
Fixed remuneration in shares (£m)	9	5	–	–
of which subject to holding period (£m)	9	5	–	–
Variable remuneration^b				
Number of individuals	9	868	47	444
Total variable remuneration (£m)	30	552	13	103
Total cash bonus (£m)	12	278	7	57
of which deferred (£m)	10	168	3	24
Total share bonus (£m)	13	274	6	46
of which deferred or subject to holding period (£m)	13	274	6	46
Long-term incentive award (£m) ^d	5	–	–	–
Total remuneration (£m)	56	1,045	30	270

Notes

- a As senior management are comprised of members of the Barclays PLC Board and members of the Barclays Group Executive Committee, it is not appropriate to separate by business area.
- b Fixed remuneration takes the form of cash and/or shares and pensions and benefits in line with policy. Variable remuneration takes the form of cash and/or shares and there are no other forms of variable remuneration.
- c Fixed cash remuneration includes an estimate for pensions and benefits during the year. Fixed cash remuneration is not subject to holding periods.
- d Face value at grant. Outcome contingent on future performance.

Appendix E – Disclosures on remuneration

Deferred remuneration – Senior management			
All figures in £m	Total	Cash	Shares
Balance as at 1 January 2018	64	12	52
Awarded in year	32	7	25
Adjusted through			
ex post explicit adjustments ^a	(1)	–	(1)
ex post implicit adjustments ^b	(12)	–	(12)
Forfeited	–	–	–
Paid in year	(27)	(2)	(25)
Balance as at 31 December 2018^c	56	17	39
of which vested	9	–	9
of which unvested	47	17	30

Deferred Remuneration – Other MRTs			
All figures in £m	Barclays International		
	Total	Cash	Shares
Balance as at 1 January 2018	772	400	372
Awarded in year	412	144	268
Adjusted through			
ex post explicit adjustments ^a	–	–	–
ex post implicit adjustments ^b	(108)	–	(108)
Forfeited	(36)	(19)	(17)
Paid in year	(414)	(197)	(217)
Balance as at 31 December 2018^c	626	328	298
of which vested	42	–	42
of which unvested	584	328	256

Deferred Remuneration – Other MRTs			
All figures in £m	Barclays UK		
	Total	Cash	Shares
Balance as at 1 January 2018	11	6	5
Awarded in year	8	3	5
Adjusted through			
ex post explicit adjustments ^a	–	–	–
ex post implicit adjustments ^b	(2)	–	(2)
Forfeited	(1)	(1)	–
Paid in year	(5)	(2)	(3)
Balance as at 31 December 2018^c	11	6	5
of which vested	1	–	1
of which unvested	10	6	4

Deferred Remuneration – Other MRTs			
All figures in £m	Barclays Other		
	Total	Cash	Shares
Balance as at 1 January 2018	89	43	46
Awarded in year	73	23	50
Adjusted through			
ex post explicit adjustments ^a	–	–	–
ex post implicit adjustments ^b	(17)	–	(17)
Forfeited	(3)	(2)	(1)
Paid in year	(50)	(19)	(31)
Balance as at 31 December 2018^c	92	45	47
of which vested	8	–	8
of which unvested	84	45	39

Notes

a Total reduction due to direct adjustments such as malus and clawback or non-achievement of LTIP performance conditions.

b Total change in remuneration due to movements in share price or exchange rate during the year.

c All outstanding awards are exposed to ex post explicit and/or implicit adjustment.

Appendix E – Disclosures on remuneration

Joining and Severance Payments

	Senior management	Other MRTs		
		Barclays International	Barclays UK	Barclays Other
Sign-on awards				
Number of beneficiaries	–	–	–	–
Made during the year (£m)	–	–	–	–
Buy-out awards				
Number of beneficiaries	–	37	–	10
Made during the year (£m)	–	38	–	5
Severance awards^a				
Number of beneficiaries	–	32	–	21
Made during the year (£m)	–	5	–	6
of which paid during the year (£m)	–	5	–	6
of which deferred (£m)	–	–	–	–
Highest individual award (£m)	–	1	–	3

Note

a Any severance awards that fall outside of paragraph 154 (a) – (c) of the EBA Guidelines are counted for the purposes of the 2:1 pay ratio for the year in which they are paid.

Number of MRTs by band^a

Remuneration band	2018 Number of MRTs
€1,000,001 to €1,500,000	246
€1,500,001 to €2,000,000	131
€2,000,001 to €2,500,000	62
€2,500,001 to €3,000,000	40
€3,000,001 to €3,500,000	18
€3,500,001 to €4,000,000	10
€4,000,001 to €4,500,000	9
€4,500,001 to €5,000,000	5
€5,000,001 to €6,000,000	6
€6,000,001 to €7,000,000	7
€7,000,001 to €8,000,000	5
€8,000,001 to €9,000,000	2
€9,000,001 to €10,000,000	–
€10,000,001 to €11,000,000	–
€11,000,001 to €12,000,000	–
€12,000,001 to €13,000,000	1

Note

a The table is prepared in Euros in accordance with Article 450 of the Capital Requirements Regulation. Data has been converted into euros using the rates published by the European Commission for financial programming and budget for December of the reported year.

Appendix E – Disclosures on remuneration

Barclays Bank PLC remuneration

The following disclosures are made in accordance with Article 450 of the Capital Requirements Regulation, the Basel Committee on Banking Supervision (BCBS) Pillar 3 disclosure requirements standard (March 2017) and the EBA Guidelines on sound remuneration policies.

Information on decision-making policies for remuneration and the links between pay and performance and Barclays' remuneration policy and process (including information on remuneration design, performance measurement and risk adjustment, deferral and vesting, fixed to variable remuneration ratio and variable remuneration and benefits policy) is contained in the Barclays PLC Remuneration report, which can be found on pages 99 to 126 of the Barclays PLC 2018 Annual Report. Details of Barclays Bank PLC Directors' remuneration for 2018 can be found in the 'Related party transactions and Directors' remuneration' note to the financial statements in the Barclays Bank PLC Annual Report 2018.

Total remuneration for the financial year		All employees
Number of individuals		23,533
Fixed remuneration (£m)		2,817
Variable remuneration (£m)		1,243
Total remuneration (£m)		4,060

Barclays Bank PLC Material Risk Takers (MRTs)

MRTs are the members of the Barclays Bank PLC Board and Barclays Bank PLC employees whose professional activities could have a material impact on Barclays Bank PLC's risk profile. A total of 1,208 individuals were MRTs in 2018. 'Senior management' means members of the Barclays Bank PLC Board (executive Directors and non-executive Directors) and members of the Barclays Bank PLC Executive Committee in accordance with Article 3(9) of CRDIV.

Barclays Bank PLC's major business areas are Corporate and Investment Banking ("CIB") and Consumer, Cards and Payments ("CCP"). 'BBPLC Other' includes internal control functions and corporate functions.

Remuneration for the financial year	Senior management ^a	Other MRTs		
		CIB	CCP	BBPLC Other
Fixed remuneration^b				
Number of individuals	35	910	37	226
Total fixed remuneration (£m)	50	446	14	72
Fixed cash remuneration (£m) ^c	42	444	14	72
Fixed remuneration in shares (£m)	8	2	–	–
of which subject to holding period (£m)	8	2	–	–
Variable remuneration^b				
Number of individuals	25	809	35	204
Total variable remuneration (£m)	54	506	14	45
Total cash bonus (£m)	24	255	7	25
of which deferred (£m)	19	152	3	10
Total share bonus (£m)	25	251	7	20
of which deferred or subject to holding period (£m)	25	251	7	20
Long-term incentive award (£m) ^d	5	–	–	–
Total remuneration (£m)	104	952	28	117

Notes

- a As senior management are comprised of members of the Barclays Bank PLC Board and members of the Barclays Bank PLC Executive Committee, it is not appropriate to separate by business area.
- b Fixed remuneration takes the form of cash and/or shares and pensions and benefits in line with policy. Variable remuneration takes the form of cash and/or shares and there are no other forms of variable remuneration.
- c Fixed cash remuneration includes an estimate for pensions and benefits during the year. Fixed cash remuneration is not subject to holding periods.
- d Face value at grant. Outcome contingent on future performance.

Appendix E – Disclosures on remuneration

Deferred remuneration – Senior management			
<i>All figures in £m</i>	Total	Cash	Shares
Balance as at 1 January 2018	90	28	62
Awarded in year	56	14	42
Adjusted through			
ex post explicit adjustments ^a	(1)	–	(1)
ex post implicit adjustments ^b	(17)	–	(17)
Forfeited	–	–	–
Paid in year	(41)	(11)	(30)
Balance as at 31 December 2018^c	87	31	56
of which vested	9	–	9
of which unvested	78	31	47

Deferred Remuneration – Other MRTs			
<i>All figures in £m</i>	CIB		
	Total	Cash	Shares
Balance as at 1 January 2018	706	368	338
Awarded in year	369	132	237
Adjusted through			
ex post explicit adjustments ^a	–	–	–
ex post implicit adjustments ^b	(97)	–	(97)
Forfeited	(32)	(17)	(15)
Paid in year	(380)	(182)	(198)
Balance as at 31 December 2018^c	566	301	265
of which vested	37	–	37
of which unvested	529	301	228

Deferred Remuneration – Other MRTs			
<i>All figures in £m</i>	CCP		
	Total	Cash	Shares
Balance as at 1 January 2018	11	6	5
Awarded in year	10	3	7
Adjusted through			
ex post explicit adjustments ^a	–	–	–
ex post implicit adjustments ^b	(2)	–	(2)
Forfeited	–	–	–
Paid in year	(6)	(3)	(3)
Balance as at 31 December 2018^c	13	6	7
of which vested	1	–	1
of which unvested	12	6	6

Deferred Remuneration – Other MRTs			
<i>All figures in £m</i>	BBPLC Other		
	Total	Cash	Shares
Balance as at 1 January 2018	39	18	21
Awarded in year	31	11	20
Adjusted through			
ex post explicit adjustments ^a	–	–	–
ex post implicit adjustments ^b	(7)	–	(7)
Forfeited	(1)	(1)	–
Paid in year	(22)	(9)	(13)
Balance as at 31 December 2018^c	40	19	21
of which vested	4	–	4
of which unvested	36	19	17

Notes

a Total reduction due to direct adjustments such as malus and clawback or non-achievement of LTIP performance conditions.

b Total change in remuneration due to movements in share price or exchange rate during the year.

c All outstanding awards are exposed to ex post explicit and/or implicit adjustment.

Appendix E – Disclosures on remuneration

Joining and Severance Payments

	Senior management	Other MRTs		
		CIB	CCP	BBPLC Other
Sign-on awards				
Number of beneficiaries	–	–	–	–
Made during the year (£m)	–	–	–	–
Buy-out awards				
Number of beneficiaries	1	34	3	3
Made during the year (£m)	0.5	35.5	2.4	1.3
Severance awards^a				
Number of beneficiaries	3	20	1	5
Made during the year (£m)	3.2	3.3	0.3	0.6
of which paid during the year (£m)	3.2	3.3	0.3	0.6
of which deferred (£m)	–	–	–	–
Highest individual award (£m)	3.0	1.0	0.3	0.2

Note

a Any severance awards that fall outside of paragraph 154 (a) – (c) of the EBA Guidelines are counted for the purposes of the 2:1 pay ratio for the year in which they are paid.

Number of MRTs by band^a

Remuneration band	2018 Number of MRTs
€1,000,001 to €1,500,000	216
€1,500,001 to €2,000,000	122
€2,000,001 to €2,500,000	60
€2,500,001 to €3,000,000	39
€3,000,001 to €3,500,000	18
€3,500,001 to €4,000,000	10
€4,000,001 to €4,500,000	9
€4,500,001 to €5,000,000	4
€5,000,001 to €6,000,000	4
€6,000,001 to €7,000,000	6
€7,000,001 to €8,000,000	5
€8,000,001 to €9,000,000	1
€9,000,001 to €10,000,000	–
€10,000,001 to €11,000,000	–
€11,000,001 to €12,000,000	–
€12,000,001 to €13,000,000	1

Note

a The table is prepared in Euros in accordance with Article 450 of the Capital Requirements Regulation. Data has been converted into euros using the rates published by the European Commission for financial programming and budget for December of the reported year.

Appendix E – Disclosures on remuneration

Barclays Bank UK PLC remuneration

The following disclosures are made in accordance with Article 450 of the Capital Requirements Regulation, the Basel Committee on Banking Supervision (BCBS) Pillar 3 disclosure requirements standard (March 2017) and the EBA Guidelines on sound remuneration policies.

Information on decision-making policies for remuneration and the links between pay and performance and Barclays' remuneration policy and process (including information on remuneration design, performance measurement and risk adjustment, deferral and vesting, fixed to variable remuneration ratio and variable remuneration and benefits policy) is contained in the Barclays PLC Remuneration report, which can be found on pages 99 to 126 of the Barclays PLC 2018 Annual Report. Details of Barclays Bank UK PLC Directors' remuneration for 2018 can be found in the 'Related party transactions and Directors' remuneration' note to the financial statements in the Barclays Bank UK PLC Annual Report 2018.

Total remuneration for the financial year		All employees
Number of individuals		26,917
Fixed remuneration (£m)		715
Variable remuneration (£m)		142
Total remuneration (£m)		857

Barclays Bank UK PLC Material Risk Takers (MRTs)

MRTs are the members of the Barclays Bank UK PLC Board and Barclays Bank UK PLC's employees whose professional activities could have a material impact on Barclays Bank UK PLC's risk profile. A total of 118 individuals were MRTs in 2018. 'Senior management' means members of the Barclays Bank UK PLC Board (executive Directors and non-executive Directors) and members of the Barclays Bank UK PLC Executive Committee in accordance with Article 3(9) of CRDIV.

Barclays Bank UK PLC's major business areas are Personal Banking and Business Banking. 'BBUKPLC Other' includes internal control functions and corporate functions.

Remuneration for the financial year	Senior management ^a	Other MRTs		
		Personal Banking	Business Banking	BBUKPLC Other
Fixed remuneration^b				
Number of individuals	25	33	9	51
Total fixed remuneration (£m)	13.8	8.4	1.5	11.2
Fixed cash remuneration (£m) ^c	13.1	8.4	1.5	11.2
Fixed remuneration in shares (£m)	0.7	–	–	–
of which subject to holding period (£m)	0.7	–	–	–
Variable remuneration^b				
Number of individuals	17	27	9	50
Total variable remuneration (£m)	12.2	5.9	1.0	4.9
Total cash bonus (£m)	6.1	3.2	0.6	3.5
of which deferred (£m)	3.8	1.2	0.2	0.6
Total share bonus (£m)	6.1	2.7	0.4	1.4
of which deferred or subject to holding period (£m)	6.1	2.7	0.4	1.4
Long-term incentive award (£m)	–	–	–	–
Total remuneration (£m)	26.0	14.3	2.5	16.1

Notes

- a As senior management are comprised of members of the Barclays Bank UK PLC Board and members of the Barclays Bank UK PLC Executive Committee, it is not appropriate to separate by business area.
- b Fixed remuneration takes the form of cash and/or shares and pensions and benefits in line with policy. Variable remuneration takes the form of cash and/or shares and there are no other forms of variable remuneration.
- c Fixed cash remuneration includes an estimate for pensions and benefits during the year. Fixed cash remuneration is not subject to holding periods.

Appendix E – Disclosures on remuneration

Deferred remuneration – Senior management			
All figures in £m	Total	Cash	Shares
Balance as at 1 January 2018	13.7	6.6	7.1
Awarded in year	9.6	3.0	6.6
Adjusted through			
ex post explicit adjustments ^a	–	–	–
ex post implicit adjustments ^b	(2.3)	–	(2.3)
Forfeited	–	–	–
Paid in year	(6.6)	(2.4)	(4.2)
Balance as at 31 December 2018^c	14.4	7.2	7.2
of which vested	1.6	–	1.6
of which unvested	12.8	7.2	5.6

Deferred Remuneration – Other MRTs			
All figures in £m	Personal Banking		
	Total	Cash	Shares
Balance as at 1 January 2018	4.2	2.2	2.0
Awarded in year	3.8	1.1	2.7
Adjusted through			
ex post explicit adjustments ^a	–	–	–
ex post implicit adjustments ^b	(0.8)	–	(0.8)
Forfeited	(0.4)	(0.2)	(0.2)
Paid in year	(2.6)	(1.0)	(1.6)
Balance as at 31 December 2018^c	4.2	2.1	2.1
of which vested	0.5	–	0.5
of which unvested	3.7	2.1	1.6

Deferred Remuneration – Other MRTs			
All figures in £m	Business Banking		
	Total	Cash	Shares
Balance as at 1 January 2018	0.5	0.3	0.2
Awarded in year	0.3	0.1	0.2
Adjusted through			
ex post explicit adjustments ^a	–	–	–
ex post implicit adjustments ^b	–	–	–
Forfeited	–	–	–
Paid in year	(0.3)	(0.1)	(0.2)
Balance as at 31 December 2018^c	0.5	0.3	0.2
of which vested	–	–	–
of which unvested	0.5	0.3	0.2

Deferred Remuneration – Other MRTs			
All figures in £m	BBUKPLC Other		
	Total	Cash	Shares
Balance as at 1 January 2018	3.1	1.4	1.7
Awarded in year	1.8	0.6	1.2
Adjusted through			
ex post explicit adjustments ^a	–	–	–
ex post implicit adjustments ^b	(0.5)	–	(0.5)
Forfeited	–	–	–
Paid in year	(1.7)	(0.7)	(1.0)
Balance as at 31 December 2018^c	2.7	1.3	1.4
of which vested	0.2	–	0.2
of which unvested	2.5	1.3	1.2

Notes

- a Total reduction due to direct adjustments such as malus and clawback.
b Total change in remuneration due to movements in share price or exchange rate during the year.
c All outstanding awards are exposed to ex post explicit and/or implicit adjustment.

Appendix E – Disclosures on remuneration

Number of MRTs by band^a

Remuneration band	2018 Number of MRTs
€1,000,001 to €1,500,000	12
€1,500,001 to €2,000,000	3
€2,000,001 to €2,500,000	–
€2,500,001 to €3,000,000	1
€3,000,001 to €3,500,000	–
€3,500,001 to €4,000,000	–
€4,000,001 to €4,500,000	–
€4,500,001 to €5,000,000	–
€5,000,001 to €6,000,000	1

Notes

a The table is prepared in Euros in accordance with Article 450 of the Capital Requirements Regulation. Data has been converted into euros using the rates published by the European Commission for financial programming and budget for December of the reported year.

b No Barclays Bank UK PLC MRTs were awarded any sign-on awards, buyout awards or severance awards in 2018.

Appendix F – CRD IV reference

Table 100: CRD IV reference

CRR ref.	High-level summary	Compliance reference
<i>Scope of disclosure requirements</i>		
431 (1)	Requirement to publish Pillar 3 disclosures	Barclays publishes Pillar 3 disclosures
431 (2)	Firms with permission to use specific operational risk methodologies must disclose operational risk information.	The Operational Risk section on page 182 contains a description of the operational risk framework, and required Pillar 3 disclosures.
431 (3)	Institution must have a policy covering frequency of disclosures. Their verification, comprehensiveness and overall appropriateness.	Barclays has a dedicated Pillar 3 policy.
431 (4)	Explanation of ratings decision upon request	Barclays provides explanations of rating decisions to SMEs whose loan applications were declined in writing, and suggests alternative sources of finance. Barclays participates in a formal appeals process, one of the successful initiatives implemented as part of Business Finance Taskforce, with a government-appointed overseer. In the case of larger corporates, written explanations are not usually requested as direct discussions with relationship managers take place.
<i>Non-material, proprietary or confidential information</i>		
432 (1)	Institutions may omit information that is not material if certain conditions are respected.	Compliance with this provision is covered by Barclays' policy.
432 (2)	Institutions may omit information that is proprietary or confidential if certain conditions are respected.	Compliance with this provision is covered by Barclays' policy.
432 (3)	Where 432 (1) and (2) apply this must be stated in the disclosures, and more general information must be disclosed.	This table specifies where disclosures are omitted.
432 (4)	Use of 432 (1) or (2) is without prejudice to scope of liability for failure to disclose material information	
<i>Frequency of disclosure</i>		
433	Disclosures must be published once a year at a minimum, and more frequently if necessary.	Compliance with this provision is covered by Barclays' policy. See under "Basis of preparation" (page 6).
<i>Means of disclosures</i>		
434 (1)	To include of disclosures in one appropriate medium, or provide clear cross-references.	Most disclosures are contained within this document. Signposting directs the reader to other publications where appropriate. Note that remuneration disclosures are contained in a dedicated publication.
434 (2)	Disclosures made under other requirements (e.g. accounting) can be used to satisfy Pillar 3 if appropriate.	Any cross-references to accounting or other disclosures are clearly signposted in this document. In particular, see page 221 for "Location of Risk Disclosures".
<i>Risk management objectives and policies</i>		
435 (1) (a)	Disclose information on strategies and processes; organisational structure, reporting systems and risk mitigation/hedging.	Risk management strategy: pp 135-142 Credit Risk: pp 143-159 Counterparty Credit Risk: pp 160-162 Market Risk: pp 163-170 Securitisation Exposures: pp 171-174 Treasury and Capital Risk: pp 175-181 Operational Risk: pp 182-185
435 (1) (b)		Model Risk: pp 186-187
435 (1) (c)		Conduct Risk: pp 188-189
435 (1) (d)		Reputation risk: pp 190-191
435 (1) (e)	Inclusion of a declaration approved by the Board on adequacy of risk management arrangements.	Legal Risk: pp 192-193
435 (1) (f)	Inclusion of a concise risk statement approved by the Board.	See page 139 of the 2018 Pillar 3 Report. This statement covers all Principal Risks.
435 (2)	Information on governance arrangements, including information on Board composition and recruitment, and risk committees.	See page 140 of the 2018 Pillar 3 Report. This statement covers all Principal Risks.
435 (2) (a)	Number of directorships held by directors.	See page 137 for a description of the risk committees. Pages 49-53 of the Annual Report contains information on Board composition, experience and recruitment.
435 (2) (b)	Recruitment policy of Board members, their experience and expertise.	Please see Page 49-53 of the 2018 Annual Report.
435 (2) (c)	Policy on diversity of Board membership and results against targets.	Please see Page 49-53 of the 2018 Annual Report.
435 (2) (d)	Disclosure of whether a dedicated risk committee is in place, and number of meetings in the year.	Please see Page 77-82 of the 2018 Annual Report.
435 (2) (e)	Description of information flow on risk to Board.	Figure on page 137 in the risk management strategy section illustrates the reporting structure to Board committees.
<i>Scope of application</i>		

Appendix F – CRD IV reference

Table 100: CRD IV reference continued

CRR ref.	High-level summary	Compliance reference
436 (a)	Name of institution	See under “Scope of consolidation” (page 10).
436 (b)	Difference in basis of consolidation for accounting and prudential purposes, naming entities that are:	Figure 1: Summary of regulatory scope of consolidation as at 31.12.18 Page 15 / table 6 : LI3 Outline of the differences in the scopes of consolidation (entity by entity)
436 (b) (i)	Fully consolidated;	
436 (b) (ii)	Proportionally consolidated;	
436 (b) (iii)	Deducted from own funds;	
436 (b) (iv)	Neither consolidated nor deducted.	
436 (c)	Impediments to transfer of funds between parent and subsidiaries	See page 176
436 (d)	Capital shortfalls in any subsidiaries outside of scope of consolidation	Entities outside the scope of consolidation are appropriately capitalised
436 (e)	Making use of articles on derogations from a) prudential requirements or b) liquidity requirements for individual subsidiaries/entities	Barclays makes use of these provisions according to its waiver from PRA
<i>Own funds</i>		
437 (1)	Requirements regarding capital resources table	Page 19 / Table 8: Capital resources Page 20 / Table 9: Summary of movements in capital resources Standalone document: Summary of terms and conditions of capital resources
437 (1) (a)		
437 (1) (b)		
437 (1) (c)		
437 (1) (d) (i)		
437 (1) (d) (ii)		
437 (1) (d) (iii)		
437 (1) (e)		
437 (1) (f)		
437 (2)	EBA to publish implementation standards for points above.	Barclays follows the implementation standards.
<i>Capital requirements</i>		
438 (a)	Summary of institution’s approach to assessing adequacy of capital levels.	Discussions of capital calculations are contained in each risk type management section (credit, market and operational). General discussion on capital planning is on pages 181-182 of the 2018 Annual Report.
438 (b)	Result of ICAAP on demand from authorities.	Barclays has not received this request from its regulator.
438 (c)	Capital requirement amounts for credit risk for each Standardised Approach exposure class.	Pages 47-48 and pages 99-100 / Table 30, 63: Minimum capital requirements for credit risk. Various other tables contain capital requirements throughout the report.
438 (d)	Capital requirements amounts for credit risk for each Internal Ratings Based Approach exposure class .	Pages 47-48 and pages 99-100 / Table 30, 63: Minimum capital requirements for credit risk. Page 42 : Barclays shows a nil return for equity investments
438 (d) (i)		
438 (d) (ii)		
438 (d) (iii)		
438 (d) (iv)		
438 (e)	Capital requirements amounts for market risk or settlement risk, or large exposures where they exceed limits .	Capital requirements for market risk are disclosed in Page 119 / Table 80: Market risk own funds requirements.
438 (f)	Capital requirement amounts for operational risk, separately for the basic indicator approach, the standardised approach, and the advanced measurement approaches as applicable.	Page 133 / Table 92: Risk weighted assets for operational risk
438 (endnote)	Requirement to disclose specialised lending exposures and equity exposures in the banking book falling under the simple risk weight approach.	Specialised lending exposures: Page 75/ Table 47: Corporate exposures subject to the slotting approach
<i>Exposure to counterparty credit risk (CCR)</i>		
439 (a)	Description of process to assign internal capital and credit limits to CCR exposures.	Page 160-162; must link to general credit risk section as we do not address assigning limits
439 (b)	Discussion of process to secure collateral and establishing reserves.	Pages 160-162
439 (c)	Discussion of management of wrong-way exposures.	Pages 162
439 (d)	Disclosure of collateral to be provided (outflows) in the event of a ratings downgrade.	See the liquidity risk management section, Appendix pages 176-178
439 (e)	Derivation of net derivative credit exposure.	Page 110 / Table 70: Counterparty credit exposure by approach
439 (f)	Exposure values for mark-to-market, original exposure, standardised and internal model methods.	Page 102 / Table 64: Impact of netting and collateral held on exposure value
439 (g)	Notional value of credit derivative hedges and current credit exposure by type of exposure.	Page 112 / Table 73: Notional value of credit derivative contracts held for hedging purposes

Appendix F – CRD IV reference

Table 100: CRD IV reference continued

CRR ref.	High-level summary	Compliance reference
439 (h)	Notional amounts of credit derivative transactions for own credit, intermediation, bought and sold, by product type.	Page 111 / Table 72: Notional exposure associated with credit derivative contracts
439 (i)	Estimate of alpha, if applicable.	The alpha used by Barclays is 1.4.
<i>Capital buffers</i>		
440 (1) (a)	Geographical distribution of relevant credit exposures.	Barclays' countercyclical capital buffer is currently set at 0.5% for UK exposures. In other jurisdictions where CCyB is being applied, Barclays does not have material relevant exposures. See table 99 for geographic distribution of relevant exposures.
440 (1) (b)	Amount of the institution specific countercyclical capital buffer.	Page 198 / Table 99
440 (2)	EBA will issue technical implementation standards related to 440 (1)	Barclays will comply with the standards once applicable.
<i>Indicators of global systemic importance</i>		
441 (1)	Disclosure of the indicators of global systemic importance	Discussed on page 9-10
441 (2)	EBA will issue technical implementation standards related to 441 (1)	Barclays will comply with the standards once applicable.
<i>Credit risk adjustments</i>		
442 (a)	Disclosure of bank's definitions of past due and impaired.	Impairment on AR page 273; online glossary for "Past Due". Pages 144-151 provide a complete description of credit quality measures.
442 (b)	Approaches for calculating credit risk adjustments.	Pages 147-151
442 (c)	Disclosure of pre-CRM EAD by exposure class.	See points 442 (d), (e), (f) below which break down this total.
442 (d)	Disclosures of pre-CRM EAD by geography and exposure class.	Pages 50-51 / Table 31: Geographic analysis of credit exposure
442 (e)	Disclosures of pre-CRM EAD by industry and exposure class.	Pages 54-55 / Table 32: Industry analysis of credit exposure
442 (f)	Disclosures of pre-CRM EAD by residual maturity and exposure class.	Pages 58-59 / Table 33: Residual maturity analysis credit exposures
442 (g)	Breakdown of impaired, past due, specific and general credit adjustments, and impairment charges for the period, by exposure class or counterparty type.	Page 197 / Table 97: Analysis of impaired and past due exposures and allowance for impairment by exposure type
442 (g) (i)		
442 (g) (ii)		
442 (g) (iii)		
442 (h)	Impaired, past due exposures, by geographical area, and amounts of specific and general impairment for each geography.	Page 197 / Table 98: Geographic analysis of impaired and past due exposures and allowance for impairment
442 (i)	Reconciliation of changes in specific and general credit risk adjustments.	Page 92 / Table 58: Analysis of movement on impairment and amounts taken directly to profit and loss Page 93 / Table 59: Regulatory adjustments to statutory impairment
442 (i) (i)		
442 (i) (ii)		
442 (i) (iii)		
442 (i) (iv)		
442 (i) (v)		
442 endnote	Specific credit risk adjustments recorded to income statement are disclosed separately.	Page 92/ Table 58: Analysis of movement on impairment and amounts taken directly to profit and loss
<i>Unencumbered assets</i>		
443	Disclosures on unencumbered assets	Barclays will implement the technical guidelines/templates issued by the EBA. Please see Page 188-189 of the 2018 Annual Report.
<i>Use of ECAs</i>		
444 (a)	Names of the ECAs used in the calculation of Standardised Approach RWAs, and reasons for any changes	Page 67
444 (b)	Exposure classes associated with each ECAI	Page 67
444 (c)	Explanation of the process for translating external ratings into credit quality steps	Page 67
444 (d)	Mapping of external rating to credit quality steps	Page 67 / Table 38: Relationship of long-term external credit ratings to credit quality steps under the standardised approach Page 54 / Table 39: Credit quality steps and risk weights under the standardised approach
444 (e)	Exposure value pre- and post-credit risk mitigation, by credit quality step.	Page 68 / Table 40: Credit quality step analysis of pre-CRM exposure and capital deductions under the standardised approach Page 69 / Table 41: Credit quality step analysis of post-CRM exposure and capital deductions under the standardised approach
<i>Exposure to market risk</i>		

Appendix F – CRD IV reference

Table 100: CRD IV reference continued

CRR ref.	High-level summary	Compliance reference
445	Disclosure of position risk, large exposures exceeding limits, FX, settlement and commodities risk.	Page 119 / Table 80: Market risk own funds requirements
<i>Operational risk</i>		
446	Disclosure of the scope of approaches used to calculate operational risk, discussion of advanced methodology and external factors considered.	Table 3 / page 13, page 133 and 182-185
<i>Exposure in equities not included in the trading book</i>		
447 (a)	Differentiation of exposures based on objectives	
447 (b)	Recorded and fair value, and actual prices of exchange traded equity where it differs from fair value.	Page 95 / Table 61: Fair value of, and gains and losses on equity investments
447 (c)	Types, nature and amounts of the relevant classes of equity exposures.	
447 (d)	Realised cumulative gains and losses on sales over the period.	
447 (e)	Total unrealised gains/losses, latent revaluation gains/losses, and amounts included within Tier 1 capital.	
<i>Exposure to interest rate risk on positions not included in the trading book</i>		
448 (a)	Nature of risk and key assumptions in measurement models.	Model assumptions on pp 37-39
448 (b)	Variation in earnings or economic value, or other measures used by the bank from upward and downward shocks to interest rates, by currency.	Page 38/ Table 23: Net interest income sensitivity (AEaR) by business unit Page 38 / Table 24: Net interest income sensitivity (AEaR) by currency
<i>Exposure to securitisation positions</i>		
449	Exposure to securitisations positions.	
449 (a)	Objectives in relation to securitisation activity.	Page 172
449 (b)	Nature of other risks in securitised assets, including liquidity.	Page 172-174
449 (c)	Risks in re-securitisation activity stemming from seniority of underlying securitisations and ultimate underlying assets.	Page 173
449 (d)	The roles played by institutions in the securitisation process.	Pages 172
449 (e)	Indication of the extent of involvement in these roles.	Pages 172
449 (f)	Processes in place to monitor changes in credit and market risks of securitisation exposures, and how the processes differ for re-securitisation exposures.	Page 172-174
449 (g)	Description of the institution's policies with respect to hedging and unfunded protection, and identification of material hedge counterparties.	Page 172
449 (h)	Approaches to calculation of RWA for securitisations mapped to types of exposures.	Pages 173 "Rating methodologies, ECAIs and RWA calculations"
449 (i)	Types of SSPEs used to securitise third-party exposures, and list of SSPEs.	Page 172 "Sponsoring conduit vehicles"
449 (j)	Summary of accounting policies for securitisations:	Page 173 "Summary of the accounting policies for securitisation activities"
449 (j) (i)	Treatment of sales or financings;	
449 (j) (ii)	Recognition of gains on sales;	
449 (j) (iii)	Approach to valuing securitisation positions;	
449 (j) (iv)	Treatment of synthetic securitisations;	
449 (j) (v)	Valuation of assets awaiting securitisations;	
449 (j) (vi)	Recognition of arrangements that could require the bank to provide support to securitised assets.	
449 (k)	Names of ECAIs used for securitisations.	Page 173
449 (l)	Full description of Internal Assessment Approach.	Page 67/ Table 38 "Relationship of long-term external credit ratings to credit quality steps under the standardised approach"
449 (m)	Explanation of changes in quantitative disclosures.	Satisfied throughout; we comment on every quantitative table in the securitisation section.
449 (n)	Banking and trading book securitisation exposures:	
449 (n) (i)	Amount of outstanding exposures securitised;	Pages 124-125 / Table 86: Outstanding amount of exposures securitised – Asset value and impairment charges
449 (n) (ii)	On balance sheet securitisation retained or purchased, and off-balance sheet exposures;	Page 126 / Table 87: Securitisation exposures – by exposure class
449 (n) (iii)	Amount of assets awaiting securitisation;	Page 124 / Table 85: Assets awaiting securitisation

Appendix F – CRD IV reference

Table 100: CRD IV reference continued

CRR ref.	High-level summary	Compliance reference
449 (n) (iv)	Early amortisation treatment; aggregate drawn exposures, capital requirements;	There is no applicable data to be published in respect of this table. see page 122
449 (n) (v)	Deducted or 1250%-weighted securitisation positions;	See page 122
449 (n) (vi)	Amount of exposures securitised and recognised gains or losses on sales.	Page 123/ Table 84 : Securitisation activity during the year
449 (o)	Banking and trading book securitisations by risk band:	
449 (o) (i)	Retained and purchased exposure and associated capital requirements, broken down by risk-weight bands;	Pages 127-128 / Table 88: Securitisation exposures – by capital approach Pages 129-130 / Table 89: Re-securitisation exposures - by risk weight band
449 (o) (ii)	Retained and purchased re-securitisation exposures before and after hedging and insurance; exposure to financial guarantors broken down by guarantor credit worthiness.	There is no applicable data to be published in respect of this table. see page 122
449 (p)	Impaired assets and recognised losses related to banking book securitisations, by exposure type	Pages 124-125 / Table 86 : Outstanding amount of exposures securitised – Asset value and impairment charges
449 (q)	Exposure and capital requirements for trading book securitisations, separately into traditional	
449 (r)	Whether the institution has provided financial support to securitisation vehicles	There is no applicable data to publish in respect of this table – no support was provided in 2018.
Remuneration disclosures		
450	Remuneration	Appendix E contains the remuneration awards made to Barclays' Material Risk Takers. See the Directors' remuneration report (DRR) of the 2018 Annual Report for other remuneration disclosures.
Leverage		
451 (1) (a)	Leverage ratio, and breakdown of total exposure measure, including reconciliation to financial statements, and derecognised fiduciary items	Page 32 / Table 19 : Leverage ratio common disclosure
451 (1) (b)		Page 32 / Table 19 : Leverage ratio common disclosure
451 (1) (c)		Page 32 / Table 19 : Leverage ratio common disclosure
451 (1) (d)	Description of the risk management approach to mitigate excessive leverage, and factors that impacted the leverage ratio during the year.	See page 178, management of capital risk.
451 (1) (e)		
451 (2)	EBA to publish implementation standards for points above.	Barclays follows the implementation standards.
Use of the IRB approach to credit risk		
452 (a)	Permission for use of the IRB approach from authority	Pages 12-13, table 2
452 (b)	Explanation of:	
452 (b) (i)	Internal rating scales, mapped to external ratings;	Page 70 / Table 42 : Internal default grade probabilities and mapping to external ratings
452 (b) (ii)	Use of internal ratings for purposes other than capital requirement calculations;	Page 151 "Applications of internal ratings"
452 (b) (iii)	Management and recognition of credit risk mitigation;	Pages 160-162
452 (b) (iv)	Controls around ratings systems.	Pages 152-153 . "Management of model risk within Barclays – the control mechanisms for the rating system"
452 (c)	Description of ratings processes for each IRB asset class, provided separately	Pages 152 . Separate descriptions apply to retail and wholesale classes collectively; hence this is not repeated for each separate class. Pages 153-155 / Table 93: IRB credit risk models selected features.
452 (c) (i)		
452 (c) (ii)		
452 (c) (iii)		
452 (c) (iv)		
452 (c) (v)		
452 (d)	Exposure values by IRB exposure class, separately for Advanced and Foundation IRB.	This is shown throughout the report.
452 (e)	For wholesale exposure classes, disclosed separately by obligor grade:	
452 (e) (i)	Total exposure, separating loans and undrawn exposures where applicable;	Pages 71 / Table 43: IRB wholesale obligor grade disclosure for central governments & central banks Pages 72 / Table 44: IRB wholesale obligor grade disclosure for institutions Pages 73 / Table 45: IRB wholesale obligor grade disclosure for corporates
452 (e) (ii)	Exposure-weighted average risk weight;	Pages 71 / Table 43: IRB wholesale obligor grade disclosure for central governments & central banks Pages 72 / Table 44: IRB wholesale obligor grade disclosure for institutions Pages 73 / Table 45: IRB wholesale obligor grade disclosure for corporates

Appendix F – CRD IV reference

Table 100: CRD IV reference continued

CRR ref.	High-level summary	Compliance reference
452 (e) (iii)	Undrawn commitments and average exposure values by asset class.	Pages 71 / Table 43: IRB wholesale obligor grade disclosure for central governments & central banks Pages 72 / Table 44: IRB wholesale obligor grade disclosure for institutions Pages 73 / Table 45: IRB wholesale obligor grade disclosure for corporates
452 (f)	For retail exposure classes, same disclosures as under 452 (e), by risk grade or EL grade.	Pages 77 / Table 48: IRB retail obligor grade disclosure for SME Pages 78 / Table 49: IRB retail obligor grade disclosure for secured retail Pages 79 / Table 50: IRB retail obligor grade disclosure for revolving retail Pages 80 / Table 51: IRB retail obligor grade disclosure for other retail exposures
452 (g)	Actual specific risk adjustments for the period and explanation of changes.	Page 94 / Table 60: Impairment charges, other value adjustments and individual impairment charges for IRB exposures
452 (h)	Commentary on drivers of losses in preceding period.	
452 (i)	Disclosure of predicted against actual losses for sufficient period, and historical analysis to help assess the performance of the rating system over a sufficient period.	Pages 94 / Table 60: Analysis of expected loss versus actual losses for IRB exposures Pages 157-158 / Table 94: Analysis of expected performance versus actual results
452 (j)	For all IRB exposure classes:	
452 (j) (i)	Where applicable, PD and LGD by each country where the bank operates	Appendix A, Pages 195-196 / Table 96: PD, LGD, RWA and Exposure by country.
452 (j) (ii)		
<i>Use of credit risk mitigation techniques</i>		
453 (a)	Use of on- and off-balance sheet netting	Pages 161-162
453 (b)	How collateral valuation is managed	Pages 161-162
453 (c)	Description of types of collateral used by Barclays	Pages 161-162
453 (d)	Types of guarantor and credit derivative counterparty, and their creditworthiness	Pages 161-162
453 (e)	Disclosure of market or credit risk concentrations within risk mitigation exposures	Pages 161-162
453 (f)	For exposures under either the Standardised or Foundation IRB approach, disclose the exposure value covered by eligible collateral	Page 62 / Table 34: Collateral and guarantees for IRB approach
453 (g)	Exposures covered by guarantees or credit derivatives	Table 62 / Table 34
<i>Use of the Advanced Measurement Approaches to operational risk</i>		
454	Description of the use of insurance or other risk transfer mechanisms to mitigate operational risk	Pages 182-185
<i>Use of Internal market risk models</i>		
455 (a) (i)	Disclosure of the characteristics of the market risk models.	Page 168 / Table 95: Market risk models selected features
455 (a) (ii)	Disclosure of the methodology and description of all-price risk measure and incremental risk charge.	Page 167
455 (a) (iii)	Descriptions of stress tests applied to the portfolios.	Page 165
455 (a) (iv)	Methodology for back-testing and validating the models.	Pages 168-169
455 (b)	Scope of permission for use of the models.	Page 13 / Table 3: The scope of the standardised and IRB approaches
455 (c)	Policies and processes to determine which exposures are to be included in the trading book, and to comply with prudential valuation requirements.	Pages 165-166
455 (d)	High/Low/Mean values over the year of VaR, sVaR, all-price risk measure and incremental risk charge.	Page 118 / Table 78: Analysis of regulatory VaR, sVaR, IRC and All Price Risk Measure
455 (d) (i)		
455 (d) (ii)		Page 117 / Table 77: The daily average, maximum and minimum values of management VaR
455 (d) (iii)		
455 (e)	The elements of the own fund calculation.	Page 119 / Table 80: Market risk own funds requirements
455 (f)	Weighted average liquidity horizons of portfolios covered by models.	Disclosed in model discussions on page 167.
455 (g)	Comparison of end-of-day VaR measures compared with one-day changes in portfolio's value.	Pages 168-169

Appendix G – EBA and BCBS reference

This table shows the tables included in the 2018 Pillar 3 report, adopted under guidance received from the EBA.

EBA Pillar 3 compliance reference

Table no	Page	High-level summary	Compliance reference
Table 4	14	Present an outline of the difference in the basis of consolidation for accounting and prudential purposes	Template L11 Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories In accordance with Article 436(b) in the CRR
Table 5	15	Main sources of differences between regulatory exposure amounts and carrying values in financial statements	Template EU LI2 Present the main sources of differences between the financial statements' carrying value amounts and the exposure amounts used for regulatory purposes In accordance with Article 436(c) in the CRR
Table 6	15	Outline of the differences in the scopes of consolidation (entity by entity)	Template EU LI3 Provide information on the consolidation method applied for each entity within the accounting and the regulatory scopes of consolidation in accordance to Article 436 (b)
Table 7	18	Provide an overview of a bank's prudential regulatory metrics	Template e KM1: Key metrics Present an overview of prudential regulatory metrics as per the BCBS Pillar 3 disclosure requirements –consolidated and enhanced framework
Table 11	25		Template EU IFRS 9-FL: Comparison of institutions' own funds and capital and leverage ratios with and without the application of transitional arrangements for IFRS 9 or analogous ECLs
Table 13	28	Overview of risk weighted assets by risk type and capital requirements	Template EU OV1 RWAs and minimum capital requirements under Part Three, Title I, Chapter 1 of the CRR. In accordance with Article 438(c) to (f) in the CRR
Table 15	29	Flow statement explaining variations in the credit risk-weighted assets (RWA) under an IRB approach and the corresponding capital requirements	Template EU CR8 Present a flow statement explaining variations in the credit RWAs of exposures for which the risk-weighted amount is determined in accordance with Part Three, Title II, Chapter 3 of the CRR and the corresponding capital requirement as specified in Article 92(3)(a).
Table 16	30	Flow statement explaining variations in the counterparty credit risk-weighted assets (RWA) under the IMM approach and the corresponding capital requirements	Template EU CCR7 Present a flow statement explaining changes in the CCR RWAs determined under the IMM for CCR (derivatives and SFTs) in accordance with Part Three, Title II, Chapter 6 of the CRR.
Table 17	30	Flow statement explaining variations in the market risk-weighted assets (RWA) under the IMA approach and the corresponding capital requirements	Template EU MR2-B Present a flow statement explaining variations in the market RWAs (as specified in Article 92(4)(b)) determined under an Part Three, Title IV, Chapter 5 of the CRR (IMA).
Table 18	32	Summary reconciliation of accounting assets and leverage ratio exposures	Template LRSum Reconciliation of the total leverage exposure and comprises of total IFRS assets used for statutory purposes, regulatory consolidation and other leverage adjustments (as per Commission implementing regulation-EU 2016/200)
Table 19	32	Leverage ratio common disclosure	Template LRCom Leverage ratio calculation and includes additional breakdowns for the leverage exposure measure (as per Commission implementing regulation-EU 2016/200).
Table 20	33	Split-up of on balance sheet exposures (excluding derivatives, SFTs and exempted exposures)	Template LRSpI Breakdown of the on-balance sheet exposures excluding derivatives, SFTs and exempted exposures, by asset class as per row 1 on LRCom (as per Commission implementing regulation-EU 2016/200)
Table 21	34	Present the breakdown of a bank's cash outflows and cash inflows, as well as its available high-quality liquid assets (HQLA)	Template LIQ1 Liquidity Coverage Ratio Present the breakdown of a bank's cash outflows and cash inflows, as well as its available high-quality liquid assets (HQLA), as measured and defined according to the LCR standard (BCBS Pillar 3 disclosure requirements – consolidated and enhanced framework)
Table 26	40	Present the breakdown of PVA for all assets measured at fair value (marked to market or marked to model) and for which PVA are required	PV1 Prudent valuation adjustments (PVA) Present a breakdown of the constituent elements of the bank's PVA according to the requirements of BCBS Pillar 3 disclosure requirements –consolidated and enhanced framework

Appendix G – EBA and BCBS reference

Table no	Page	High-level summary	Compliance reference
Table 28	44	Total and average net amount of exposures	Template EU CRB-B Provide the total and the average amount of net exposures over the period by exposure class in accordance with Article 442(c)
Table 31	50	Geographical breakdown of exposures Purpose: Provide a breakdown of exposures by geographical areas and	Template EU CRB-C Provide a breakdown of exposures by geographical areas and exposure classes in accordance with Article 442(d)
Table 32	54	Concentration of exposures by industry or counterparty types	Template EU CRB-D Provide a breakdown of exposures by industry or counterparty types and exposure classes in accordance with Article 442(e)
Table 33	58	Maturity of exposures	Template EU CRB-E Provide a breakdown of net exposures by residual maturity and exposure classes in accordance with Article 442(f)
Table 35	64	Disclose the extent of the use of CRM techniques	Template EU CR3 Present information on exposure value covered by financial collateral, other collateral, guarantees and credit derivatives and the outstanding secured exposures and the secured amount within those exposures in accordance with Article 453(f) and (g),
Table 36	65	Credit risk exposure and CRM effects	Template EU CR4 Paragraph 99 of the guidelines requires institutions to show the effect of all CRM techniques applied in accordance with Part Three, Title II, Chapter 4 of the CRR, including the financial collateral simple method and the financial collateral comprehensive method in the application of Article 221 and Article 22 of the same regulation on standardised approach capital requirements' calculations.
Table 37	66	This table provides the effect on the RWAs of credit derivatives used as CRM techniques	Template EU CR7 The template applies to all institutions using one of the approaches included in the template in accordance with Article 153(5) or Article 155(2)
Table 40	68	Analysis of credit risk exposures by asset classes and risk weight before the application of CCF and CRM under the standardised approach	Template EU CR5A Regulatory exposure values broken down by risk weights. Institutions should disclose exposures pre conversion factor and pre risk mitigation techniques. The risk weight used for the breakdown corresponds to the different credit quality steps applicable in accordance with Article 113 to Article 134 in Part Three, Title II, Chapter 2 of the CRR
Table 41	69	Analysis of credit risk exposures by asset classes and risk weight after the application of CCF and CRM under the standardised approach	Template EU CR5B Regulatory exposure values broken down by risk weights. Institutions should disclose exposures post conversion factor and post risk mitigation techniques. The risk weight used for the breakdown corresponds to the different credit quality steps applicable in accordance with Article 113 to Article 134 in Part Three, Title II, Chapter 2 of the CRR
Table 43-51	71-80	Analysis of credit risk exposures by exposure classes and PD grades	Template EU CR6 In the application of Article 452(e) and (g), this template applies to institutions included in paragraph 7 of these guidelines using either the FIRB approach or the AIRB approach for some or all of their exposures in accordance with Part Three, Title II, Chapter 3 of the CRR
Table 52	81	This table provides Credit quality of exposures by exposure class and instrument	Template EU CR1-A The effect of credit derivatives on the IRB approach capital requirements' calculations. The pre-credit derivative RWAs before taking account of the credit derivatives mitigation effect has been selected to assess the impact of credit derivatives on RWAs in accordance Article 453(g)
Table 53	86	This table present credit quality of exposures by industry or counterparty types	Template EU CR1-B Provide a comprehensive picture of the credit quality of an institution's on-balance-sheet and off-balance sheet exposures by industry in accordance with Article 442(g)
Table 54	89	Credit quality of exposures by geography	Template EU CR1-C Provide a comprehensive picture of the credit quality of an institution's on-balance-sheet and off-balance sheet exposures by geography in accordance with Article 442(h)
Table 55	91	Table present the ageing of past-due exposures	Template EU CR1-D Provide an ageing analysis of accounting on-balance-sheet past-due exposures regardless of their impairment status

Appendix G – EBA and BCBS reference

Table no	Page	High-level summary	Compliance reference
Table 56	91	Table presents the analysis of non-performing and forborne exposures	Template EU CR1-E Provide an overview of non-performing and forborne exposures as per the Commission Implementing Regulation (EU) No 680/2014
Table 57	92	Table presents changes in the stock of defaulted and impaired loans and debt securities	Template EU CR2-B This table present the changes in an institution's stock of defaulted loans and debt securities in accordance to Article 442(i) of the CRR
Table 58	92	Table presents changes in the stock of general and specific credit risk adjustments	Template EU CR2-A This table present the changes in an institution's stock of defaulted loans and debt securities in accordance to Article 442(i) of the CRR
Table 64	102	Analysis of counterparty credit risk exposures by approach	Template EU CCR1 Template present a comprehensive view of the methods used to calculate CCR regulatory requirements and the main parameters used within each method in accordance with Article 439(e), (f) and (i) of the CRR
Table 65	103	Analysis of counterparty credit risk exposures by regulatory portfolio and risk weight under standardised approach	Template EU CCR3 This applies to institution using the credit risk standardised approach to compute RWAs for CCR exposures in accordance with Article 107 in the CRR, irrespective of the approach used to determine EAD in accordance with Part Three, Title II, Chapter 6 of the same regulation.
Table 66-68	105-107	Analysis of counterparty credit risk exposures by exposure classes and PD grades	Template EU CCR4 RWAs and parameters used in RWA calculations for exposures subject to the CCR framework (excluding CVA charges or exposures cleared through a CCP) and where the credit risk approach used (in accordance with Article 107 in the CRR) to compute RWAs is an IRB approach
Table 69	108	This table provides a quantitative disclosure of counterparty credit risk specialised lending and equity exposures using the simple risk weight approach.	Template EU CR10 (CCR) The template applies to all institutions using one of the approaches included in the template in accordance with Article 153(5) or Article 155(2)
Table 70	110	This table shows the impact of netting and collateral held on exposure values	Template EU CCR5A Provide an overview of the impact of netting and collateral held on exposures for which the exposure value is measured in accordance with in accordance with Article 439 (e)
Table 71	110	This table shows the composition of collateral for exposures to CCR	Template EU CCR5B Provide a breakdown of all types of collateral (cash, sovereign debt, corporate bonds, etc.) posted or received by banks to support or reduce CCR exposures related to derivative transactions or to SFTs, including transactions cleared through a CCP.
Table 73	112	This table shows credit derivatives exposures	Template EU CCR6 Provide a breakdown extent of an institution's exposures to credit derivative transactions broken down between derivatives bought or sold in accordance with Article 439(g) and (h)
Table 74	113	This table shows the EAD and RWAs corresponding to exposures to central counterparties	Provide a comprehensive picture of the institution's exposures to CCPs in the scope of Part Three, Title II, Chapter 6, Section 9 of the CRR
Table 75	114	This table provides CVA regulatory calculations (with a breakdown by standardised and advanced approaches).	Template EU CCR2 The template applies to all institutions with exposures subject to CVA capital charges in accordance with Part Three, Title VI, Article 382 in the CRR.
Table NA	169	Presents a comparison of the results of estimates from the regulatory VaR model	Template EU MR4 Present a comparison of the results of estimates from the regulatory VaR model approved in application of Part Three, Title IV, Chapter 5 of Regulation (EU) 575/2013 with both hypothetical and actual trading outcomes, to highlight the frequency and the extent of the backtesting exceptions, and to give an analysis of the main outliers in backtested results
Table 78	118	This template displays the values (maximum, minimum, average and the ending for the reporting period) resulting from the different types of models approved to be used for computing the market risk regulatory capital charge at the group level before any additional capital charge is applied	Template EU MR3 Outputs of internal models approved for use in accordance with Part Three, Title IV, Chapter 5 of the CRR for regulatory capital purposes at the group level (according to the scope of regulatory consolidation as per Part One, Title II of the same regulation).

Appendix G – EBA and BCBS reference

Table no	Page	High-level summary	Compliance reference
Table 80	119	Market risk own funds requirements	Template MR1-A Capital requirements and RWAs (as specified in Article 92(4)(b) in the CRR)
Table 81	120	Market risk under standardised approach	Template MR1-B Capital requirements and RWAs (as specified in Article 92(4)(b) in the CRR).
Table 82	120	Market risk under internal models approach	Template MR2-A Capital requirements and RWAs (as specified in Article 92(4)(b) of the CRR).
Table 94	157	This table provides backtesting data to validate the reliability of PD calculations	Template EU CR9 The template applies to all institutions included in paragraph 7 of these guidelines using the AIRB approach and/or the FIRB approach. Where an institution makes use of an FIRB approach for certain exposures and an AIRB approach for others, it must disclose two separate sets of portfolio breakdowns in separate templates.
Table 99	198	This table provide a geographical distribution of credit exposures by country	CCyB Template requires institutions to disclose the geographical distribution by country of credit exposures of an institution that are relevant for the calculation of its CCyB in accordance with Article 140(4) of the CRD and Article 440 of the CRR

Location of risk disclosures

Barclays' Risk disclosures are located across the Annual Report and Pillar 3 Report.

Risk management		Annual Report	Pillar 3 Report
Overview of Barclays' approach to risk management. A detailed overview together with more specific information on policies that Barclays Group determines to be of particular significance in the current operating environment can be found in Barclays PLC Pillar 3 Report 2018 or at Barclays.com.	■ Enterprise Risk Management Framework (ERMF)	129	136
	■ Principal risks	129	136
	■ Risk appetite for the principal risks	129	136
	■ Roles and responsibilities in the management of risk	129	136
	■ Frameworks, policies and standards	n/a	138
	■ Assurance	n/a	139
	■ Effectiveness of risk management arrangements	n/a	139
	■ Learning from our mistakes	n/a	139
	■ Barclays' risk culture	130	139
	■ Barclays Group-wide risk management tools	n/a	139
■ Risk management in the setting of strategy	n/a	142	
Material existing and emerging risks			
Insight into the level of risk across our business and portfolios, the material existing and emerging risks and uncertainties we face and the key areas of management focus.	■ Material existing and emerging risks potentially impacting more than one principal risk	131	n/a
	■ Credit risk	133	n/a
	■ Market risk	134	n/a
	■ Treasury and capital risk	134	n/a
	■ Operational risk	134	n/a
	■ Model risk	135	n/a
	■ Conduct risk	135	n/a
	■ Reputation risk	136	n/a
	■ Legal risk and legal, competition and regulatory matters	136	n/a
	Principal risk management		
Barclays' approach to risk management for each principal risk with focus on organisation and structure and roles and responsibilities.	■ Credit risk management	137	143
	■ Management of credit risk mitigation techniques and counterparty credit risk	n/a	160
	■ Market risk management	139	163
	■ Management of securitisation exposures	n/a	171
	■ Treasury and capital risk management	140	175
	■ Operational risk management	143	182
	■ Model risk management	145	186
	■ Conduct risk management	146	188
	■ Reputation risk management	147	190
	■ Legal risk management	148	192
Risk performance			
Credit risk: The risk of loss to the firm from the failure of clients, customers or counterparties, including sovereigns, to fully honour their obligations to the firm, including the whole and timely payment of principal, interest, collateral and other receivables.	■ Credit risk overview and summary of performance	150	n/a
	■ Maximum exposure and effects of netting, collateral and risk transfer	150	n/a
	■ Expected Credit Losses	153	n/a
	■ Movements in gross exposure and impairment allowance including provisions for loan commitments and financial guarantees	156	n/a
	■ Management adjustments to models for impairment	158	n/a
	■ Measurement uncertainty and sensitivity analysis	159	n/a
	■ Analysis of the concentration of credit risk	164	n/a
	■ Barclays Group's approach to management and representation of credit quality	166	n/a
	■ Analysis of specific portfolios and asset types	169	n/a
	■ Forbearance	171	n/a
Market risk: The risk of a loss arising from potential adverse changes in the value of the firm's assets and liabilities from fluctuation in market variables including, but not limited to, interest rates, foreign exchange, equity prices, commodity prices, credit spreads, implied volatilities and asset correlations.	■ Market risk overview and summary of performance	177	115
	■ Balance sheet view of trading and banking books	178	116
	■ Review of management measures	179	117
	■ Review of regulatory measures	180	117

Location of risk disclosures

Risk performance continued		Annual Report	Pillar 3 Report
Treasury and capital risk – Liquidity: The risk that the firm is unable to meet its contractual or contingent obligations or that it does not have the appropriate amount, tenor and composition of funding and liquidity to support its assets.	<ul style="list-style-type: none"> ■ Liquidity risk overview and summary of performance 	183	n/a
	<ul style="list-style-type: none"> ■ Liquidity risk stress testing 	183	n/a
	<ul style="list-style-type: none"> ■ Liquidity pool 	185	n/a
	<ul style="list-style-type: none"> ■ Funding structure and funding relationships 	186	n/a
	<ul style="list-style-type: none"> ■ Encumbrance 	188	n/a
	<ul style="list-style-type: none"> ■ Credit ratings 	192	n/a
	<ul style="list-style-type: none"> ■ Contractual maturity of financial assets and liabilities 	193	n/a
Treasury and capital risk – Capital: The risk that the firm has an insufficient level or composition of capital to support its normal business activities and to meet its regulatory capital requirements under normal operating environments or stressed conditions (both actual and as defined for internal planning or regulatory testing purposes). This includes the risk from the firm's pension plans.	<ul style="list-style-type: none"> ■ Capital risk overview and summary of performance 	197	n/a
	<ul style="list-style-type: none"> ■ Regulatory minimum capital and leverage requirements 	198	9
	<ul style="list-style-type: none"> ■ Analysis of capital resources 	198	19
	<ul style="list-style-type: none"> ■ Analysis of risk weighted assets 	200	27
	<ul style="list-style-type: none"> ■ Analysis of leverage ratio and exposures 	201	32
	<ul style="list-style-type: none"> ■ Foreign exchange risk 	202	36
	<ul style="list-style-type: none"> ■ Pension risk review 	203	37
Treasury and capital risk – Interest rate risk in the banking book: The risk that the firm is exposed to capital or income volatility because of a mismatch between the interest rate exposures of its (non-traded) assets and liabilities.	<ul style="list-style-type: none"> ■ Interest rate risk in the banking book overview and summary of performance 	205	38
	<ul style="list-style-type: none"> ■ Net interest income sensitivity 	206	38
	<ul style="list-style-type: none"> ■ Analysis of equity sensitivity 	206	38
	<ul style="list-style-type: none"> ■ Volatility of the FVOCI portfolio in the liquidity pool 	207	39
Operational risk: The risk of loss to the firm from inadequate or failed processes or systems, human factors or due to external events (for example fraud) where the root cause is not due to credit or market risks.	<ul style="list-style-type: none"> ■ Operational risk overview and summary of performance 	208	132
	<ul style="list-style-type: none"> ■ Operational risk profile 	209	133
Model risk: The risk of the potential adverse consequences from financial assessments or decisions based on incorrect or misused model outputs and reports.	<ul style="list-style-type: none"> ■ Model risk overview and summary of performance 	211	n/a
Conduct risk: The risk of detriment to customers, clients, market integrity, competition or Barclays from the inappropriate supply of financial services, including instances of wilful or negligent misconduct.	<ul style="list-style-type: none"> ■ Conduct risk overview and summary of performance 	212	n/a
Reputation risk: The risk that an action, transaction, investment or event will reduce trust in the firm's integrity and competence by clients, counterparties, investors, regulators, employees or the public.	<ul style="list-style-type: none"> ■ Reputation risk overview and summary of performance 	213	n/a
Legal risk: The risk of loss or imposition of penalties, damages or fines from the failure of the firm to meet its legal obligations including regulatory or contractual requirements.	<ul style="list-style-type: none"> ■ Legal risk overview and summary of performance 	214	n/a
Supervision and regulation			
Barclays Group's operations, including its overseas offices, subsidiaries and associates, are subject to a significant body of rules and regulations.	<ul style="list-style-type: none"> ■ Supervision of Barclays Group ■ Global regulatory developments ■ Financial regulatory framework 	215 216 217	n/a n/a n/a
Pillar 3 Report			
Contains extensive information on risk as well as capital management.	<ul style="list-style-type: none"> ■ Summary of risk and capital profile ■ Notes on basis of preparation ■ Scope of application of Basel rules 	n/a n/a n/a	4 6 7
Risk and capital position review: Provides a detailed breakdown of Barclays' regulatory capital adequacy and how this relates to Barclays' risk management.	<ul style="list-style-type: none"> ■ Group capital resources, requirements, leverage and liquidity ■ Analysis of credit risk ■ Analysis of counterparty credit risk ■ Analysis of market risk ■ Analysis of securitisation exposures ■ Analysis of operational risk 	n/a n/a n/a n/a n/a n/a	17 41 96 115 121 132

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Note

a Pages 99 to 126 of the Annual Report (which is available at www.barclays.com/annualreport) include information required to be disclosed on remuneration in accordance with CRR article 450.

Forward-looking statements

This document contains certain forward-looking statements within the meaning of Section 21E of the US Securities Exchange Act of 1934, as amended, and Section 27A of the US Securities Act of 1933, as amended, with respect to the Barclays Group. Barclays cautions readers that no forward-looking statement is a guarantee of future performance and that actual results or other financial condition or performance measures could differ materially from those contained in the forward-looking statements. These forward-looking statements can be identified by the fact that they do not relate only to historical or current facts. Forward-looking statements sometimes use words such as 'may', 'will', 'seek', 'continue', 'aim', 'anticipate', 'target', 'projected', 'expect', 'estimate', 'intend', 'plan', 'goal', 'believe', 'achieve' or other words of similar meaning. Examples of forward-looking statements include, among others, statements or guidance regarding or relating to the Barclays Group's future financial position, income growth, assets, impairment charges, provisions, business strategy, capital, leverage and other regulatory ratios, payment of dividends (including dividend payout ratios and expected payment strategies), projected levels of growth in the banking and financial markets, projected costs or savings, any commitments and targets, estimates of capital expenditures, plans and objectives for future operations, projected employee numbers, IFRS 9 impacts and other statements that are not historical fact. By their nature, forward-looking statements involve risk and uncertainty because they relate to future events and circumstances. These may be affected by changes in legislation, the development of standards and interpretations under International Financial Reporting Standards including the continuing impact of IFRS 9 implementation, evolving practices with regard to the interpretation and application of accounting and regulatory standards, the outcome of current and future legal proceedings and regulatory investigations, future levels of conduct provisions, the policies and actions of governmental and regulatory authorities, geopolitical risks and the impact of competition. In addition, factors including (but not limited to) the following may have an effect: capital, leverage and other regulatory rules applicable to past, current and future periods; UK, US, Eurozone and global macroeconomic and business conditions; the effects of any volatility in credit markets; market related risks such as changes in interest rates and foreign exchange rates; effects of changes in valuation of credit market exposures; changes in valuation of issued securities; volatility in capital markets; changes in credit ratings of any entities within the Barclays Group or any securities issued by such entities; the potential for one or more countries exiting the Eurozone; instability as a result of the exit by the United Kingdom from the European Union and the disruption that may subsequently result in the UK and globally; and the success of future acquisitions, disposals and other strategic transactions. A number of these influences and factors are beyond the Barclays Group's control. As a result, the Barclays Group's actual future results, dividend payments, and capital and leverage ratios may differ materially from the plans, goals, expectations and guidance set forth in the Barclays Group's forward-looking statements. Additional risks and factors which may impact the Barclays Group's future financial condition and performance are identified in our filings with the SEC (including, without limitation, our Annual Report on form 20-F for the fiscal year ended 31 December 2018), which are available on the SEC's website at www.sec.gov.

Subject to our obligations under the applicable laws and regulations of the United Kingdom and the United States in relation to disclosure and ongoing information, we undertake no obligation to update publicly or revise any forward-looking statements, whether as a result of new information, future events or otherwise.